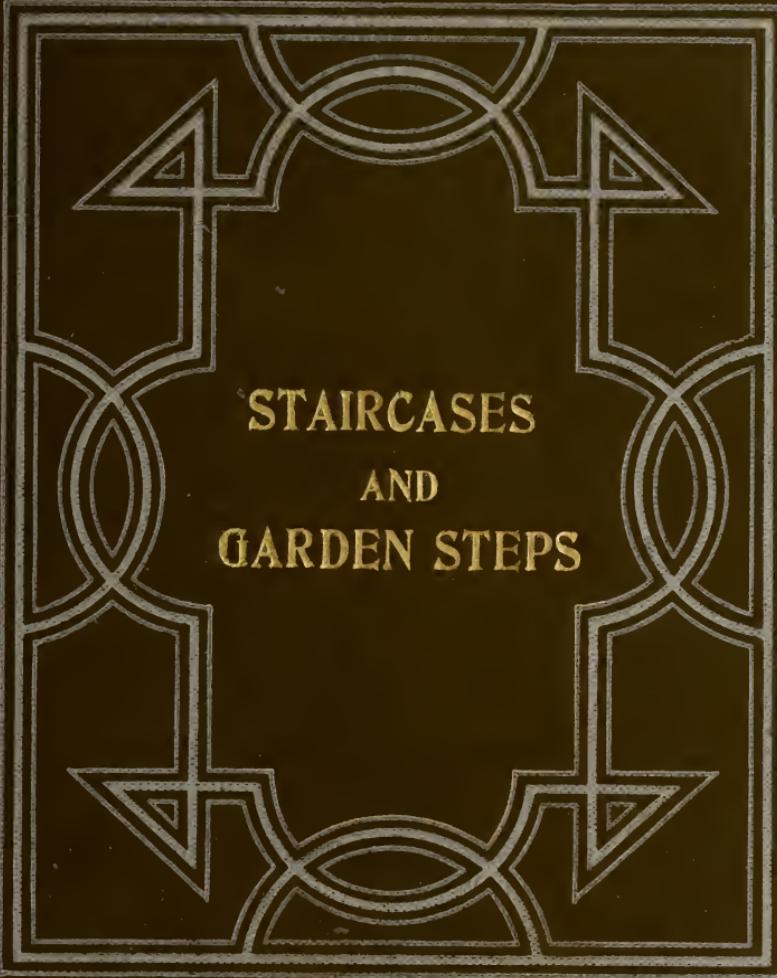






HOUSE DECORATION
SERIES



STAIRCASES
AND
GARDEN STEPS



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STAIRCASES AND GARDEN STEPS



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STAIRCASES AND
GARDEN STEPS

By
GUY CADOGAN ROTHERY

AUTHOR OF
"CEILINGS AND THEIR DECORATIONS,"
"CHIMNEYPieces AND INGLENooks," ETC.

NEW YORK
FREDERICK A. STOKES COMPANY
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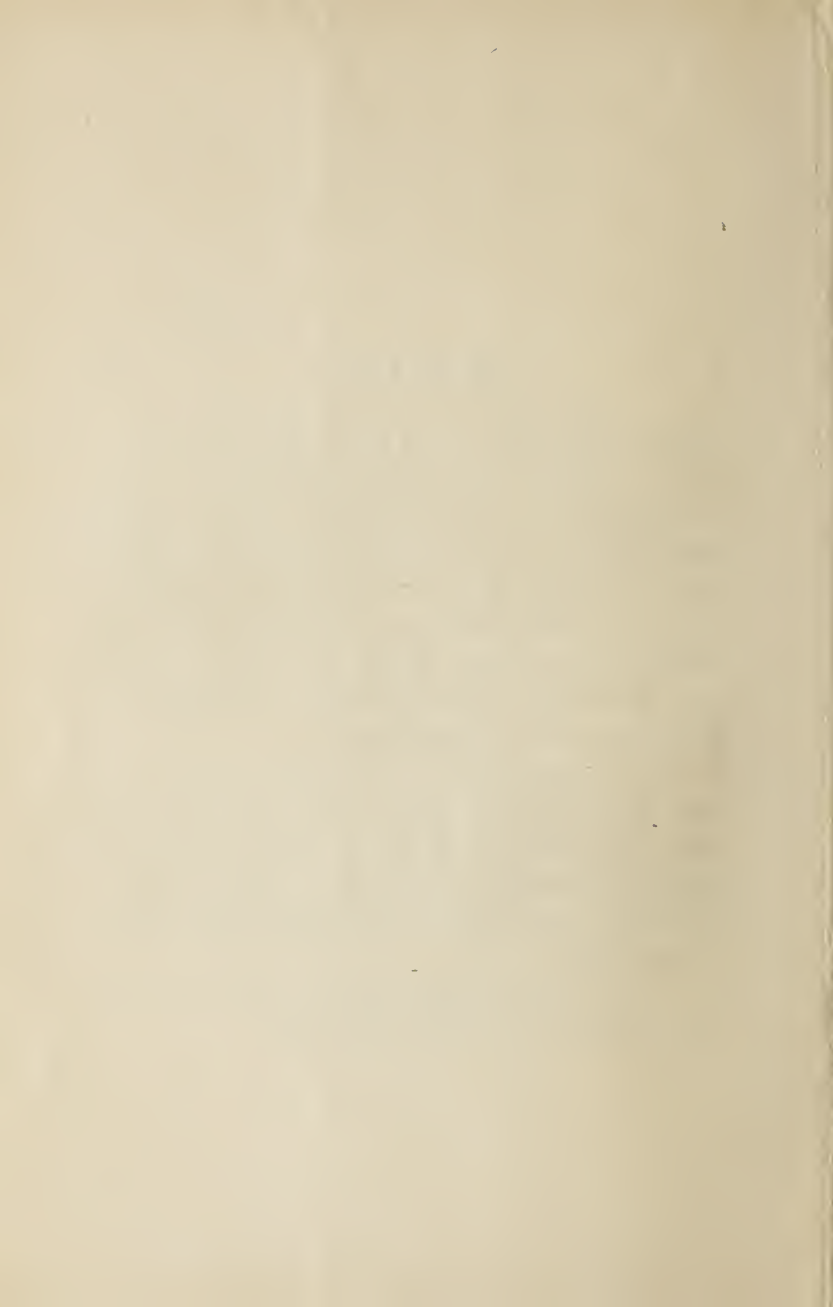
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PREFACE.

IN this, the third of THE HOUSE DECORATION SERIES, the same evolutionary plan as adopted in the preceding volumes has been adhered to. An endeavour has been made to show how the staircase developed in importance with the advance of art, suffered an eclipse when architecture was at a low ebb, and now gives evidence of receiving renewed attention.

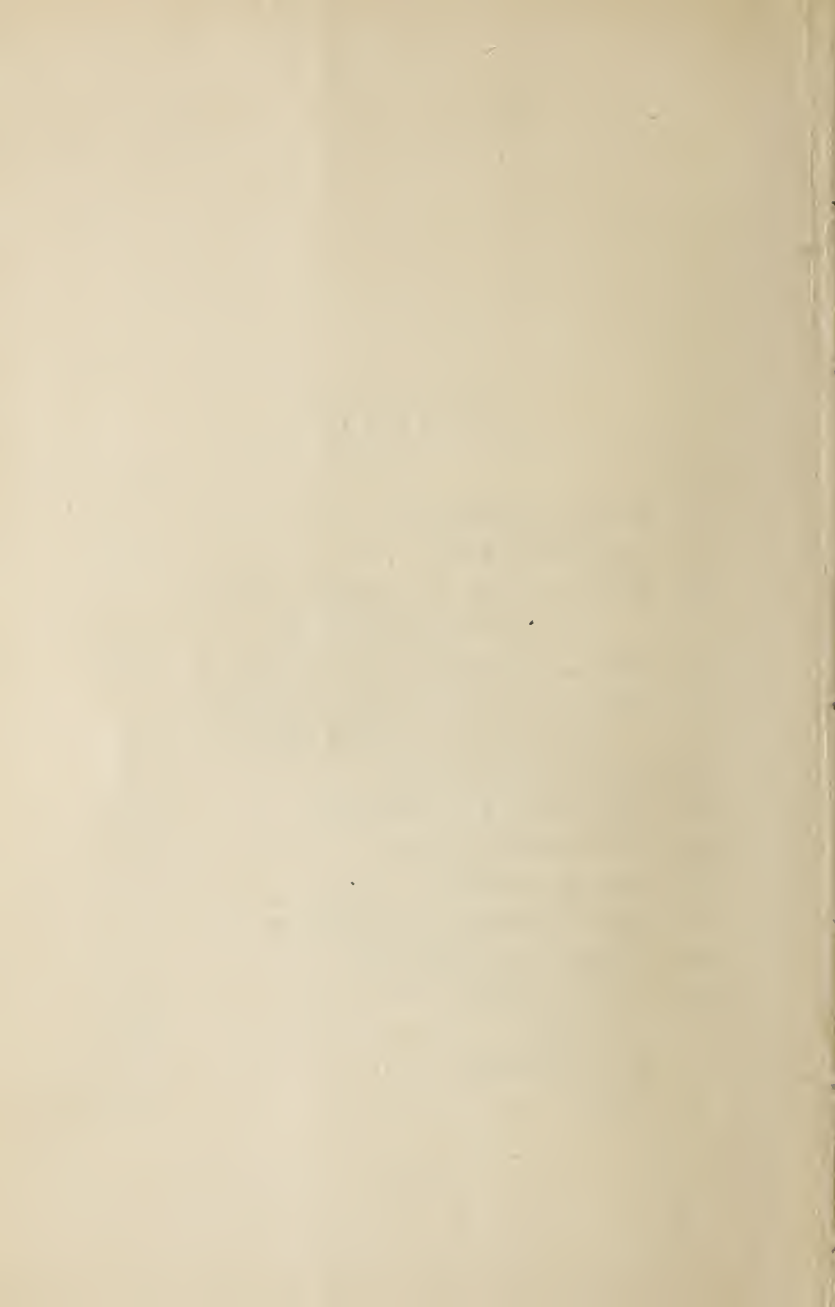
While adopting the historical form, the aim in writing the book has been to point out that which is good in past work and present tendencies, and that which is bad, or carries the signs of weakness that leads to decadence.

It has been thought necessary to add a brief glossary of technical terms.



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STAIRCASES AND GARDEN STEPS

CHAPTER I

EARLY BEGINNINGS

IN Babylonia, that wonderful region of mud and sun-dried brick buildings, we find traces of well-designed stairways dating back to at least circa 6000 B. C. It must be remembered that the civil engineers and architects of those far-off days, in that cradle of civilization, went about their work with considerable deliberation. Their first care was to provide huge platforms of baked clay, platforms which were often staged, and whereon they erected a palace, a temple, or a group of dwellings clustering in orderly array around the public edifices. These platforms were usually many feet above the ground. For instance, at Tel-lo (Sirpula) the platform is 36 feet high. Not only were these reached by inclined planes, but also by broad ranges of steps. At Tel-lo the barrel-

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vaulted palace standing on its pedestal about 656 feet long, 139 feet broad and nearly 40 feet high, was approached both by inclined planes and steps. But that was not all. Tall towers of many stories were a feature of the local architecture, and these were served sometime by inclined planes winding heliacally round the outside. In other instances the successive floors were connected by means of short flights of stairs rising from storey to storey, usually clinging to the side of the walls. Both methods showed a stage of constructional art far in advance of those which gave us many types of staircases still prevailing in Europe until well past the Middle Ages. They were methods, however, which were the natural outcome of human dealings with far-stretching flat expanses and plastic building materials.

In ancient Egypt outside stairways were used for domestic purposes placed inside the courts against the dwellings. Sometimes there were two flights, right and left, flanking the building from one side to the other, meeting in the middle of the first floor on a common platform. In many cases, the stairs, steep and at right angles,

interrupted by frequent small square landings.

In other regions other limitations led to the evolution of quite different modes of attacking the problems of ascent.

Arboreal builders, whether they placed their dwellings on platforms above the forest undergrowth, or amidst the forked branches of trees under the canopy and screen of foliage, resorted to the ladder method of access, suggested by the intertwined lianes and the stepped trunks of palms, with their spirally disposed diamond-shaped butt ends of fallen leaves. These, starting from much the same point, would eventually evolve along quite opposite lines, as we shall soon see.

Then troglodyte man in many parts of the world imitated Nature in another of her moods, turning the "accidental" to his own ends. In all geological formations where caverns occur there is a tendency either towards stratification of rocks or a pitting of the cliff's surface, both of which inequalities assist man in his aspirations, and may be improved upon without much difficulty. Indeed it is not alone the Giant's Causeway in County Antrim, that presents

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us with a stairway on a grandiose scale; other basaltic outcrops, lime and chalk deposits provide the same lesson. With practical modesty cave-dwellers toilsomely carved deeper the crevices, systematised the pittings to provide foot and finger hold, so that they might gain their rocky refuges. This primitive step-making of the Ligurian troglodyte may be seen on the Riviera, where prehistoric dwellings are found on the shore, some close to the waves, others high up, and only approachable by precariously following clefts in the almost perpendicular face, with occasional assistance from man-made footholes.

The Pyrenees and Dordogne afford examples both of prehistoric and historic cave-dwellings side by side. In "Cliff Castles" the Rev. S. Baring Gould, writing of La Roche Gageac, on the Dordogne just below Sarlat, says:

"The white Pirassic limestone dappled orange, fawn colour, and silver grey, rises 250 feet above the river, the lower portion is in terraces, very narrow, in which are the houses clinging to the rock, cramped between the Dordogne and the cliff which rises 140 to 160 feet above. The old houses

are écheloned along the face of the rock, superposed the one on the other. The habitations are either partly or wholly caves, they do not reach half-way up the rock which overhangs to the west. In the face of the cliff are two castles built into its recesses: one pertained to the Bishop of Sarlat, and the other to the Fénelon family. Both were ideals of a stronghold in the Middle Ages, impossible to escalate or to undermine. The principal castle, that which belonged to the Bishop of Sarlat, occupies one of the profound horizontal furrows in the face of the rock, that are so common in the limestone and chalk formations. It consists of three towers, two of which are square, and one round, with curtains uniting them and a gate-tower, to which a flight of steps cut in the rock gives access for a part of the way. But to reach this flight one has to mount by a series of posts serving as steps driven into sockets in this rock, with only here and there a sustaining iron bar."

He dealt with the subject even more picturesquely in his novel "Noemi," where he tells us:

"To make the position—the eagle nest

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in the rock—absolutely inaccessible to an enemy, the stair had been contrived so that it could be wrecked by those flying up it with facility, and that thereby they might cut off possibility of pursuit. The method adopted was this. Holes had been bored into the rock face in gradual ascent from the platform at the foot of the rock to the gate-tower of the castle, nestled on the platform in the precipice. In each such hole a balk or billet of wood was planted, sliced away below where it entered, and this end was then made fast by a wedge driven under it. From each step, when once secured, that above it could next be made firm. To release the steps a tap from underneath sufficed to loosen the wedge and send it and the balk it supported clattering down.”

At La Roche Corail, just below Angoulême on the river Charente, there are the remains of a once extensive cliff castle. Originally it was approached by steps cut in the face of the rock, most of them having openings communicating with internal galleries, so that unwelcome intruders could be pushed off with pikes or swords.

Much the same practices were adopted in other countries and other ages. Not only

so, but we even find the principle adapted to more regular forms of architecture, as, for instance, when we see an outside stairway, supported on successive arches and clinging to the castle wall, break off abruptly, the void of the unfinished arch being bridged by a removable wooden platform.

A great deal of controversy has raged about the subject of the Round Towers in Ireland. Although the reason why the circular form (a difficult one in masonry) was adopted remains obscure, and suggests some observance of a forgotten religious custom, their actual use need leave no doubt whatever. They are always found either directly connected to or in close association with churches or monastic buildings. Clearly they were the storehouses and places of refuge for the clergy and monks. Windows are small, placed high up, and in the great majority of examples the doorways, seldom very large, are many feet above the ground. The fact that there are no signs of any means to reach these doorways long puzzled investigators, but it is evident that some rudimentary form of stairs in wood, probably little more than ladders, easily destroyed or hauled up, were used. Thus these Round

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Towers may be looked upon as the ecclesiastic counterparts of the rock castles and refuges of the bishops and seigneurs, the remains of which are still to be seen on the Continent.

Yet another phase of the troglodyte development is to be seen not only in the rock villages of the Riviera and certain parts of Asia, but even in our own hilly districts and seaside cliff towns, where we see sometimes considerable buildings clinging to the declivity, each storey entered from a separate level. In such cases the need for stairways is obviated by a serpentine road with branch approaches. A house of this kind looked at from the front may be said to have four, five, or six storeys, yet each is truly a ground floor, with its direct outside communication, though frequently enough without any internal intercommunication. We may take Nottingham as an example, where the Long Stairs are cut in the perpendicular face of the rock, reaching from the old church to the summit, and having houses stepped one above the other, with access from the stairs. The Short Stairs are altogether artificial, and have houses on both sides.



SPIRAL STAIRCASE, COLCHESTER CASTLE.

In an elementary and varied form this may be seen in the valley of the Hindu Kush, where underground dwellings on a steep hillside are brought into communication by a "corded way," consisting of ladders placed on the ground, and, naturally, constantly changing gradients.

Of course the ladder and the vertical notched pole have their limitations, although they are still extensively used as means of communication in buildings. A ladder, unless it be of the rope variety, cannot be lengthened indefinitely, and if carried beyond a certain length must tend to become vertical. Hence the breaking up of the flights, placed successively with the same inclination or with alternating inclinations, as in the Babylonian towers and our own quarter-turn straight flight staircases. Then the notched pole, while suggesting the yoke newel, or central support for steps, also brought about a recognition of the advantages in gyratory advance, or in other words, the greater practicability of the spiral over the direct vertical ascent.

It is curious to observe that our notions of safety in staircase building are not always apparent to the undeveloped mind. Semi-

savage dwellers in the beehive type of hut, although quite familiar with tree climbing, when first brought into contact with our commodious broad flights of indoor stairs have felt it incumbent to go up and down on all fours, which, by the way, is the attitude assumed to the staircase by that "primitive" creature the baby, all the world over. The ladder or notched pole, practically vertical, where both hands and feet are utilised, is comprehensible, but the easy flight of stairs appears awful in its ambitious course. Indeed, there seems to be something fundamental in this feeling, for the waking terrors of the savage are very much akin to widely prevailing conditions in the dream state.

Thomas De Quincey in his "Confessions of an English Opium Eater," describing his fantastically troubled slumber says :

"Many years ago I was looking over Piranesi's 'Antiquities of Rome.' Mr Coleridge, who was standing by, described to me a set of plates by that artist, called his *Dreams*, which record the scenery of his own visions during the delirium of a fever. Some of them represented vast Gothic halls . . . Creeping along the sides of the walls

you perceived a staircase, and upon it, groping his way upwards, was Piranesi himself; follow the stairs a little farther and you perceive it came to a sudden, abrupt termination, without any balustrade, and allowing no step onwards to him who had reached the extremity except into the depths below. Whatever is to become of poor Piranesi? You suppose, at least, that his labours must in some way terminate here. But raise your eyes, and behold a second flight of stairs still higher, on which again Piranesi is perceived, by this time standing on the very brink of the abyss. Again elevate your eye, and a still more aerial flight of stairs is beheld, and again is poor Piranesi busy in his aspiring labours, and so on, until the unfinished stairs and Piranesi both are lost in the upper gloom of the hall. With the same power of endless growth and self-reproduction did my architecture proceed in dreams. In the early stages of my malady the splendours of my dreams were indeed chiefly architectural, and I beheld such a group of cities and palaces as was never yet beheld by the waking eye, unless in the clouds."

Many who have never read "The

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English Opium Eater," who have never studied architecture in its dizziest moods, have suffered from these nightmares. The terrible sinking that overwhelms as the broken stairways, the unbridged chasms are revealed, is apt to haunt the troubled or overwrought brain when it swoons into that "brother of death," which "exacteth a third part of our lives," as Sir Thomas Browne hath it.

Fundamentally the stairway is an outside accession, as with the Babylonia spiral inclined plane. The same idea appears to have prevailed in Greece, where the exiguous first floors were reached by outside stairways, either opening into the streets or the inner courts.

In Rome somewhat more attention was given to staircases. Both the inclined plane and the spiral staircase were used in public buildings; for instance, for the ascent of the triumphal columns. It is probable also that staircases of some magnitude were in use in such palaces as the Golden House of Nero. But so far as direct evidence is concerned staircases in domestic buildings were few, narrow and steep. Vitruvius is quite silent on the point, which is rather

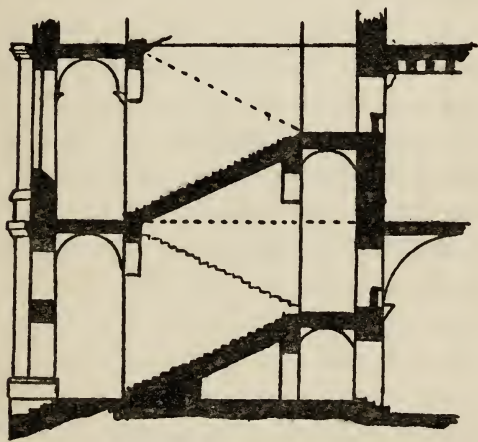
significant. It would appear, however, that in Rome itself and in other populous towns, each storey in the tall houses was approached by a separate staircase. As a rule these were built in the house itself, having an outlet into the street, but no communication with other parts of the house. The outside staircase was exceptional. In some instances, where the building consisted of a ground floor and first floor, with an inner court, the staircase led from the ground floor itself or the court. Examples of this arrangement are to be seen at Pompeii, where, however, we must remember that Greek influence was very much felt. Nevertheless one of these examples furnishes most interesting if somewhat indirect evidence as regards design and structural detail. Only rough indications remain as to the exact position of the staircase in the court, but luckily the decorative artist at work was anxious to achieve not merely good balance, but actual symmetry, so he painted a staircase opposite the real one. This pictured make-weight shows us narrow, steep steps with high risers, protected by a severely plain balustrade, a mere wooden paling under a square

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handrail. Yet the house was evidently one of some pretensions to elegance. Vestiges of longer flights, supported on vaultings, are also extant. Sometimes a succession of arches were used, one end of the steps being engaged in the side wall. When narrow, the staircases were generally carried up between two walls, the steps being engaged on each side. This was the type prevailing in the *insulæ*, or blocks of many storey buildings, of Rome, the soffits usually being barrel-vaulted.

Roman practice as modified by local conditions away from the Imperial centre are interesting, especially as shown in Syria, when we remember the ancient methods prevailing there. A house at Shakka of the Romanised type, belonging to the 2nd or 3rd century, has a remarkable flight of external stairs. Broad stone steps are carried from the ground at a gentle inclination about half way up one flank of the building, where it reaches a landing, thence the flight rises again, turns the corner and is carried half way along the broad façade to a platform, with a final short, steep flight to the flat, parapeted roof. A doorway is provided on each platform. The steps jut out and

have no other support than their engagement in the wall. No signs of parapet exist, but it is possible that a wooden balustrade originally finished off this curious exposed work. Another house at Dama, belonging to the same period, has short external flights to the first floor, and then an internal flight to the second floor, a system which we find common among Mediæval builders.



STAIRCASE IN ROMAN AMPHITHEATRES

For public buildings stairways were given due consideration. We have already referred to the inclined planes and spiral

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staircases. In amphitheatres a common practice was to provide alternate opposed flights separated by a curtain wall, one flight leading to the principal gallery and the others to the upper seats.

Both the Greeks and Romans, and indeed also Asiatic peoples, provided their temples with broad flights of deep, low steps, generally in uneven numbers, so that those who mounted them began and ended with the right foot, which, no doubt, had something to do with the ritual of approaching the altar with the right hand uplifted in submission and supplication. Palladio states that the number usually chosen was eleven or thirteen. If more were used, then a broader step, a half-way platform for rest, was provided to break up the flight into two sections.

CHAPTER II

THE CASTLE TYPE

BUILDERS of the Romanesque period, like those of antiquity, treated staircases somewhat in the light of necessary evils, or at all events merely as contrivances for reaching upper floors. All notion of their monumental and artistic value, any idea of their being treated otherwise than from the purely utilitarian point of view came very much later. It is well, however, to emphasise the fact that this applies to domestic economy only ; both the Greeks and Romans perfectly well understood the charm of nobly proportioned flights of steps as a setting for their temples and other public buildings. But even with them it was a question of outside effect alone.

In our Norman castles, and even in those constructed down to the 13th century, we find

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a curious combination of two principles in building. One of the main preoccupations of the builders both in connection with the castle dependencies and the keep or tower itself, was to render them as nearly impregnable as possible. They were masses of masonry intended to repel rather than to attract the stranger. For this reason the ground floors were practically dungeons, that is to say they rarely had any direct communication with the outside. At this level the walls were of immense thickness, and probably originally were never pierced except by rare narrow embrasures, mere slits of windows, placed high up and constructed with a skyward slant. It was the first floor which formed the real entrance level. It was reached by way of an outside stairway and used as a kind of vestibule or guardroom. These outside staircases were often entirely open, though sometimes roofed over with wood, and in the later centuries even enclosed by wooden walls. They were generally very narrow. Quite commonly such stairways commenced abruptly, at other times the foot was protected by a porch. At the top of this flight was usually a landing leading into an outer



ROMANESQUE STAIRCASE, PAINTED CHAMBER, WESTMINSTER.

vestibule; or the stairs passing under a machiolated and embrasured gateway opened straight into the guardroom. Inside, a winding staircase, or a succession of straight flights, led from the ground floor to the top of the edifice. In very many cases there were supplementary stairs linking different floors or particular sets of chambers. Such were the chief points so far as perpendicular communication from the ground to the crenelated terrace were concerned.

Now let us consider more in detail how these several features were dealt with by the Mediæval builder. Happily for our purpose we have many existing relics and fairly good records of those which have passed away.

We can still trace the outside stairways which were at one time the only approaches to the interiors of the castles and keeps of Canterbury, Colchester, Conisborough, Dover, Guildford, Norwich, Porchester, Rochester and many others scattered up and down the country.

At Rochester the stairs were planned in two flights. They were placed parallel to the castle walls, commencing on one face,

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turning the corner and ending on the second side. At the angle of the castle and staircase there was a landing under an arched gatehouse; then the open flight continued along the second face and ended abruptly some distance from the fortified portal. A drawbridge provided the necessary communication. The arched gateway gave access to a short corridor and a second portal barred the way to the guardroom. Possibly the whole staircase may have been covered by a timber pent-house, or even a hipped roof supported by wooden pillars, for such could be speedily removed in the event of danger. At all events we know that there was a wooden porch outside the first portal, for we read in the Liberate Rolls of 24 and 25 Henry III. the instructions: "To renovate the stair before the outer gate of the tower at Rochester Castle and make certain pent-house above the stair aforesaid." Referring to another outside staircase connected with the same stronghold, further instructions are given: "To cause to be made certain iron trellis on the staircase before our chambers towards our herbery."

Evidently this was originally an open

stairway with unprotected side, and the iron trellis was a guard or balustrade, added at a more polished period. From these Liberate Rolls and other sources it appears that towards the 13th century additional outside stairways were provided, possibly to connect the tower with the dependencies, when these wooden structures were replaced by more permanent edifices of stone or brick.

It is instructive to observe elaborate development along these lines at quite an early date. For evidence of this it is significant that we have to go to another Kentish castle, the magnificent ancient pile at Dover. This great Norman stronghold originally had an open flight of stairs, spreading slightly fanwise at base, and placed at right angles to the building. At the top of this first flight is a landing and an arched doorway, but to the right of the landing another flight was run up parallel and clinging to the wall of the castle. It leads through an arched portal to a crenelated vestibule. Thence forward the staircase is covered in, and turning the angle of the building leads to a second vestibule on the third floor level, where there was a fine doorway (afterwards

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blocked) giving entrance to the State apartments, which were thus very well protected, for adequate precautions were taken to isolate internally each separate storey. One evident advantage of this extended outside staircase was that it gave a semi-private entrance to the State apartments, which could be reached without going through those parts of the castle occupied by the garrison.

At Norwich the arrangements were quite elaborate. The exceptionally large proportioned external stone staircase, running along the south-eastern front, had to pass under two fortified archways. Probably when erected there was a drawbridge near the gate-house tower, which was pierced by an archway leading into the guardroom.

Conisborough keep possessed a straight flight of stone steps, which led to a square vestibule built outside the tower. Through this entrance was gained to the main apartment on the first floor.

At Bolton Castle, Yorkshire, originally there was an external staircase to the first floor, and, curiously enough, another one on the north side, reaching to the second floor. In this latter case there was a short



FOOT OF SPIRAL STAIRS, CHATEAUDUN, FRANCE.

flight leading to a long terrace, thence a right and left steep flight led up to the arched door. Bolton Castle was erected by Richard Scrope, Chancellor to Richard II., and took eighteen years to build, according to Leland. It seems almost certain that this second entrance, with its rudimentary grand perron, was an addition of much later date.

At Scarborough Castle there was a pit in the ground immediately below the first floor entrance. It would appear, therefore, that the stone landing must have replaced an earlier drawbridge or wooden platform. Over its doorway was a shute for discharging stones, molten lead or boiling water.

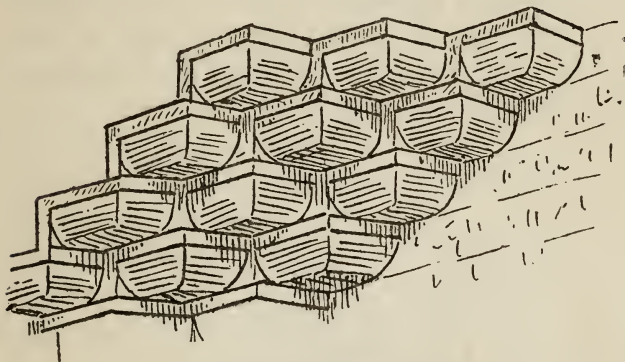
Hedingham Castle, a Norman keep in Essex built by the de Veres, is interesting in many ways. The keep is a lofty square tower of stone, five storeys high. The entrance was placed on the western side, where there was a flight of steps to the first floor. At the head of the stairs was a lofty doorway flanked by columns supporting a semi-circular arch, decorated with zigzag ornaments. On the sides were grooves for a portcullis, so that apparently the landing was in the form of a drawbridge.

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In some cases these external stairs were built at right angles to the castle. We have here the beginnings of the grand staircase leading to a terrace, the perron of the Continental chateaux builders. More often, however, the stairs were built parallel to the outer walls, clinging to the side of the castle, which was an evolution from the primitive protruding isolated steps used, as we have seen, by cave-dwellers. Dacre Castle, Cumberland, offers us a curious and not unhandsome combination of the two methods. From the first floor there is a flight of steps clinging to the side of the castle, and leading to a considerable platform, jutting out at right angles. This is approached by short right and left flights at right angles to the landing, and consequently parallel to the building. This is distinctly the perron in a modest form.

Farther stages in the evolution from the cave-dwelling type are to be seen in several old castellated structures. For instance in the Tour d'Orange at Carpentras Castle there is a very ornamental set of protruding steps. They project a fair distance and run up a considerable height. Each step is flat on the top and rounded at the base.

The steps are placed close together, one below the other, and are supported by three rows of similar projections. This quaint stairway, therefore, is in the form of a diagonal band of four courses of corbelling.



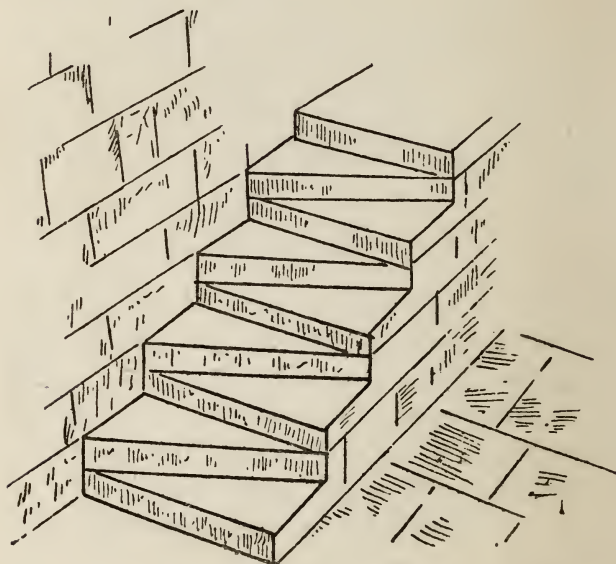
CORBELLED STEPS, CARPENTRAS

It was a decorative way of treating an exceedingly crude contrivance. While quite pretty to look at, the way is narrow, steep, without parapet, without even a handrail on the perpendicular wall face. But doubtless in the way of comfort and safety it was an improvement on the isolated steps with gaps between.

A safer method, also taking its origin from cave-dwellings and early masonry work, was to build an extra thickness on

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the wall, diminishing it gradually from bottom to top and then placing steps on the inclined plane. While in later times stairways of this pattern were made of great width and with some regard to monumental effect, they were often narrow and extremely steep. An example of this can be seen at Belsay Castle, Northumberland, built about 1320.



WEDGE STEPS, ST NAZAIRE

To obviate the disadvantages of this steepness and the consequent height of

the individual steps, an ingenious device was adopted. The method hit upon was to cut away half of each step diagonally, the broad side of the top wedge being against the wall, and the broad side of the lower wedge outside. By this simple means each step was made dual, the steepness being divided by half, and thus while ascending was made easier, descent was rendered less dangerous, so that the practical utility of the stairs was greatly increased. On giving the matter a very little consideration it will be seen that the arrangement of these wedges in zigzag formation is directly in accordance with the natural movements of man, who, under normal conditions, only places one foot at a time on one step, it therefore provides an admirable solution of a difficult problem. Examples of this kind of step may be seen in the galleries of the transept of the Cathedral of Nôtre Dame, Paris, and also at the Church of St Nazaire, Carcassonne. As we shall see later on, the zigzag system of stepping is a natural and favourite way to soften the sharpness of declivities in gardens.

Returning to the plan of building stair-

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ways parallel to outside walls, it will be found on examining the very numerous examples of old work still existing that considerable diversity of treatment prevailed. The supporting wall was often so contrived as to merge into the general body of the structure, so that the stairway was merely a more or less wide and comfortable stepped vertical course. Quite as frequently, however, it was frankly an addition, the whole mass protruding from the building. In either case it seems to have been early realised that where the steps were to be of considerable width, economy of material and labour, with a very welcome gain in the diminishing of weight, could be secured by building not a solid supporting wall, but a series of blind arches. This suggested many possibilities for improvement.

For instance, at one point, either at the intermediary resting-place or on the top landing, the arch could be left uncompleted, the void being crossed by a platform of wood, or by a drawbridge. In this way the approach could be interrupted by producing a gap whenever attack was threatened. Another outcome of this was the carrying up of a curtain wall, to form a guard or



HEAD OF SPIRAL STAIRS, CHATEAUDUN, FRANCE.

parapet. At first these guards were solid screen walls. Later they were arcaded, the pillars being more or less decorated.

Many of these external stairways, besides having porches at the base and pent-houses over the top landing, were protected by roofs, some even more or less completely boarded in. Wood was used for this purpose originally, with a view to prompt removal in times of warfare of anything that could prove useful to an enemy as "cover" in an assault on the castle.

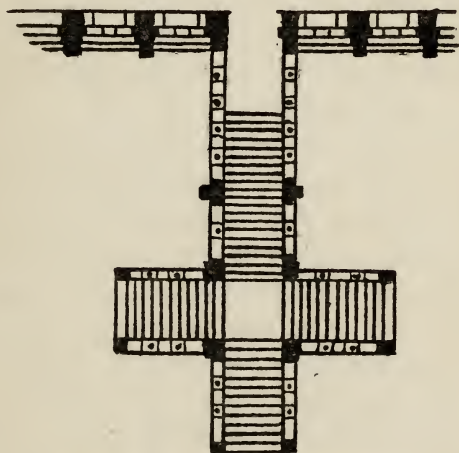
When the buildings were not of a military nature greater pains were taken to make these stairways convenient and even handsome. Thus within the precincts of Canterbury Cathedral, as an adjunct to the Augustinian Monastery, a fine external stairway was erected in the 11th century, leading to the Strangers' Hall. It has an upper landing and a roof supported by double arcading, with diminishing columns as the stairs ascend. At the old *Chambre des Comptes*, Paris, built in the reign of Louis XII., there was a beautiful external staircase running parallel to the wall. It commenced with an ornamental porch, and after an easy ascent opened direct into the

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large hall on the first floor. This porch, with its entrance placed at right angles to the flight, had an arched entrance, with grooved pillars supporting an elaborately pinnacled roof, the pediment being ornamented with the sculptured arms of France between two winged antelopes gorged with royal crowns. A pent-house roof protected the stairs, and was supported by three pillars united by arches, both the columns and pendentives being powered with *fleur-de-lis*. A parapet formed of panels was carved in high relief, with *lis* enfiled by crowns, alternating with crowned dolphins. This superstructure, as well as the stairs, was of stone; as was the equally beautiful stairway of the same type at the no very distant Sainte Chapelle.

When the stairs were placed at right angles to the building they naturally assumed a more monumental appearance. An original, and what under certain circumstances might prove a decidedly useful treatment of this sub-variety was formerly to be seen at the Castle of Montargis, erected early in the second half of the 13th century. It was of stone, the steps supported on a series of semi-arches diminishing in altitude.

A pointed roof of wood was supported by a series of pillars. But the remarkable feature of this stairway was that it was in the form of a Latin cross, the three short limbs furthest away from the building affording three separate communications with the courtyard. The middle and right and left flight rose at a fairly steep angle



PLAN OF STAIRWAY, MONTARGIS

to a common platform, whence there was a long flight at an easy gradient to another rest, and then a final set of low steps to the entrance portal. A modification of this scheme was later used for internal staircases

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leading from entrance halls to State apartments.

It can easily be understood that the approach to the first floor by an external stairway had its practical purpose in the castle type of architecture, and some excuse when used in connection with public buildings even down to the 16th century, when precautions had to be taken against the dangers of sudden assault. Clearly an enemy attempting to scale an exposed stairway overlooked by embrasures, through which defenders could shower down arrows, stones, or discharge firearms, was at a serious disadvantage. But when this precaution became less urgent the progress of the arts caused the dignity that a well designed external stairway could give to a building to be recognised, and this modified style persisted long after the state of affairs that had called it into being had ceased to operate. Indeed, as we shall see, it continues to be appreciated not only where an imposing addition to a façade is desired, but even in the domestic architecture of quite a modest order in such divergent regions as Flanders and Italy.

Leaving this phase of the development

for later consideration, we must return to the castles in order to examine the methods adopted internally in the Romanesque and Gothic structures for perpendicular inter-communication.

We have already pointed out that if an enemy succeeded in gaining the first floor of a castle keep, they had by no means completed their task. The stronghold was far from being at their mercy. The narrowness, steepness, and the position of the internal staircases made them easy to defend. They could be blocked without much trouble, and a single armed man at the upper landing could keep at bay a whole string of assailants forced to mount in single file. Many of these staircases were also protected by arched and loopholed portals. How effectually such an internal defence could be organised will be realised by anyone considering the grand flight of stone steps, one hundred in number, leading up steeply between two walls and under vaulted ceiling in the Round Tower at Windsor Castle. This is a straight flight of very unusual breadth. Still, the upper landing would have been an awkward place to capture in the face of a few resolute pikemen or arque-

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busiers. A very similar arrangement is to be seen at Castle Rising, Norfolk.

At La Rochebrune, a tiny rock castle near Brantôme, there is an internal spiral staircase leading from the lower to the upper chamber, with pierced steps, to be used as *meutrières*.

While the common rule was to have an internal staircase mounting from the ground floor to the top storey or the parapets, this method was not universally adopted. In some cases the descending steps leading to the dungeon-like ground floor were not directly connected with the ascending flight.

In the early castles staircases were built in the thickness of the wall, a tubular shaft being fitted with steps. In the most primitive type of structures these steps were merely projecting slabs of stone, isolated as in the cliff caves, or, in more advanced form, placed close together, so as to form a continuous stair. With these steps straight flights from storey to storey were formed; in such cases the shafts being planned at an angle, or the steps merely jugged out from the wall. More usually the steps wound round the circular shaft in spiral formation. An instance of this is seen in the mono-

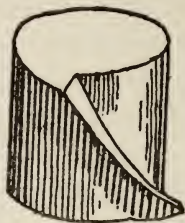


ROUND TOWER, WINDSOR CASTLE.

lithic church of St Emilion, Dordogne, carved out of the solid rock, where there is a hole in one of the aisles giving access to the crypt below, a spiral stairway being cut in rock forming the walls of the shaft. It must have early occurred to builders that the open shaft was a danger to the garrison which could be surmounted without great difficulty, first, by providing a sustaining wall for the straight flights, and, secondly, by placing a central column or newel for supporting the inner ends of the spirally disposed steps. As a rule, with narrow, straight flights of steps, the plan was to adopt the old Roman method, and run them between two walls, as we see at Windsor Castle, the steps being engaged in the masonry on each side. This was a natural style of building, but it had the disadvantage of requiring much space, and making the stairs awkwardly abrupt, even if the flights were only carried from storey to storey. With the spiral stairs the first improvement appears to have been to build up the central column, inserting the thin end of the steps into its body and the broad end into the wall. But this was only done with quite narrow stairs; with the more

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important ones a spiral inclined plane, vaulted beneath and flat on top, was thrown from the vertical columns to the walls, and on this the steps were placed. A masonry of small stones, often little better than rubble, was used. Subsequently the drums

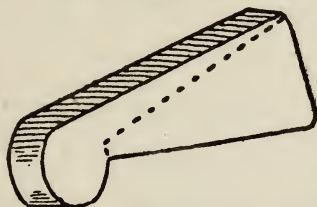


THREADED DRUM FOR SPIRAL STAIRS

of the newel were provided with a spiral ledge, like the flat thread of a screw, as a kind of key for the vaulting.

Towards the thirteenth century, possibly owing to improved methods of quarrying, vaulting was suppressed, and steps of single slabs re-introduced, but now of considerable width. Each step was made to carry its own section of the newel. This was accomplished by cutting the thin end of the step in such a way as to leave a circular swelling, generally grooved in some fashion both at top and bottom. The result of this was that as each step was placed in position, the

outer broad end engaged in the wall of the cage, the lower end of the upper step resting on the upper edge of the lower one, the spiral thus opening out fanwise, solid columns were built up, the inner parts of the steps providing their own support. This was a very considerable advance in simplification, but an even greater improvement came when the cutting out of the

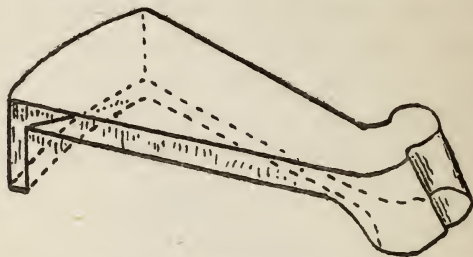


SPIRAL STEP WITH PORTION OF NEWEL

steps was elaborated, the drum end being carved with a spiral groove or thread, above the step, in order to furnish a handrail. This led to further elaboration and to an evolution towards decorative carving. In order to lighten construction, the solid drum was replaced by a segment of a circle calculated in accordance with the dimensions of the staircase. In this way the newel became a hollow cylinder instead of a solid column, which rendered certain forms of decoration and central lighting possible.

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The Gothic architects went even farther, designing isolated spiral staircases, with solid or hollow newels, and the outer ends of the steps supported on colonettes, which



SPIRAL STEP WITH SEGMENT OF HOLLOW NEWEL

also served the purpose of a cage. When desired these colonettes could be united towards the base by panels of pierced tracery, or by a simple handrail.

We must not now follow this advance in design and constructional practice, but must return for the present to a consideration of the old castles and what they have to teach us.

At Colchester Castle, which some antiquaries have attributed to the Saxon period, a peculiar plan was adopted. The original outside stairway was on the north side and led up to the first floor, passing under an arched gate. Adjoining this gateway was

a narrow gallery and also a circular staircase of small dimensions, leading upwards only. On the opposite side of the castle was a much larger spiral staircase, which reached from the ground floor to the top. The first named has a central newel, is vaulted, and the steps are made of three slabs.

Of Anglo-Saxon masonry work another specimen remained in the ancient palace of Westminster, standing at the south-east angle of the Painted Chamber. It is reproduced on plate facing page 18, being particularly interesting as showing the method of construction of the newel.

Canterbury Castle, like that at Dover, had two spiral staircases. These were built in the thickness of the walls, at the angles. There was also a gallery running horizontally through the thickness of the wall and connected with one of the staircases.

Rochester Castle, as might be expected from its magnitude and architectural importance, possessed three internal staircases, all built in the thickness of the walls. One of these, of moderate size, placed close to the entrance portal, descended to the ground floor and ascended to the topmost. There was another small staircase, parallel to this,

but nearly in the opposite angle, which ran from the first floor to the top, and the third and larger one, in the further angle, also ran from this floor to the top. On the third floor there was a gallery in the thickness of the wall as at Canterbury, only here it almost circled the castle, linking up the three staircases. The gallery, although horizontal in general plan, ran at different levels, these being connected by steps, while other steps served to enable soldiers to reach the loopholes. A similar gallery but far less developed, existed in the Guildford keep.

At Colchester Castle the spiral staircase occupied a shaft in the thickness of the wall, and was placed in the opposite angle to the first floor entrance.

In the keep of Conisborough Castle the method adopted was to have flights of steps encased in the walls, running from floor to floor.

At Hedingham Castle, Essex, the placing of the internal staircases much resembled the arrangements existing at Colchester, but with a difference. From the first floor there was a descending flight to the gloomy ground floor. In the north-west corner,

however, a spiral staircase leads from the ground floor to the summit. It is contained in the thickness of the wall and is exceptionally large for England, being eleven feet in circumference. These walls, by the way, are 14 feet thick at the base and 12 feet thick above, being pierced for doorways and windows (the latter increasing in size and elaborateness of decoration as each successive floor is reached) and hollowed out for the fireplaces and stairs.

It will be seen that the aim of the builder was to afford inter-communication without taking up more space than was absolutely necessary, and without dangerously weakening the defensive plans. By encasing narrow spiral staircases in the thick walls themselves space was economised, and each stairhead became a point that could be easily defended. The castle keep was in effect divided into as many strongholds horizontally as there were storeys, for each floor was a complete apartment, only approached by the narrow ways on its circumference, the otherwise solid walls, floors and ceilings, effectively isolating each storey. Even if the first floor was gained, the garrison could retreat upwards and

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continue fighting, waiting for relief or for an opportunity for sallying out. It is to be noted that in the oldest castles the State apartments are always on the third or fourth storey, thus being protected by two or three lines of defence below and out of range of slings and bows. But as the centuries progressed greater claims for social comfort were made. Then more staircases were provided, though still comparatively restricted in dimensions and hidden away.

Another improvement was the introduction of private stairways, not to be used by the garrison or for general service. Thus it is that we see secondary staircases from the first floor to the top storey or even the embattled roof, and more particularly the short flights connecting the State apartments with the floor above or below. They were intended for the ladies and the master of the stronghold. These additions were very necessary, for the castles were little worlds of their own, and so privacy had to be considered.

When the keep became merely a kind of forlorn hope refuge, and the castle dependencies, no longer built of wood, assumed greater importance, inner courtyards were



GOTHIC STAIRCASE, WINDSOR CASTLE.

formed, the Keep and the Great Hall being two strong points united by curtain walls. This change also brought about multiplication of stairways, and the builders, still anxious to save space internally and to preserve defensive horizontal unity, devised the outside turret to contain the staircase. These were, at all events in the early days, invariably placed inside courtyards. They did not interfere with internal planning of buildings, and for defensive purposes were practically outside of it. Probably such turret-staircases were first introduced in the great monastic establishments. These turrets frequently formed horizontal means of communication between the keep and the hall, or between other parts of the great buildings, the practically isolated spiral staircase having corridors at various landings branching out in any direction desired. This was the method adopted by Raymond du Temple in the old Valois Louvre. But we have evidence of something of the same sort much earlier in our own country. The Liberate Rolls, temp. Henry III., already quoted, show that at Rochester Castle and elsewhere there were several staircases reserved for serving different parts of the

stronghold. We also see this when the hall, detached from the keep, became an integral part of the edifice. Then it was common to have a small circular staircase or a straight flight rising from the hall to the minstrel gallery, whence corridors to the private apartments could be reached. Often, too, a set of small spiral stairs led from the dais, close to the monumental fireplace, to the private apartments. Such stairs might be hidden in the walls, concealed by the arras hangings, or be enclosed in circular or octagonal screens of carved wood or stone.

These refinements, however, belong to the period of transition, to the rising refinement brought in with Gothic architecture and ornament. To this period of widening horizons must also be attributed the peculiar arrangements existing at Langley Castle, Northumberland, built in the second half of the fourteenth century. It is a long building with four square towers at the angles, and a smaller turret on the north side, attached by a series of chambers to the north-west tower. This additional turret has an arched portal guarded by a portullis, with a passage leading to a circular

staircase. It is of considerable size and is the only one in the large building, measuring 80 feet by 24 feet internally (the walls are 7 feet thick), and of four storeys. The towers are no less than 60 feet high. A peculiarity of this arrangement of a ground floor entrance close to the staircase is that there does not appear to have been any moat or other outside works. A possible commentary on this lack of precautions is the fact that the castle appears to have been gutted by fire at an early but unrecorded period.

CHAPTER III

SPIRAL STAIRCASES OF THE GOTHIC AND RENAISSANCE PERIODS

ON first attempting a study of a spiral staircase of the Gothic or Renaissance periods—say those in Tattershall or Fyvie Castles, those at Chambord and Blois, or those in the Belvedere at the Vatican, or in the Palazzo Contarini, Venice—the sensation is one of pleasurable astonishment. There appears to be something well-nigh miraculous in such examples of man's daring ambition. Their superb balance, the gracefulness of the upward curving lines, the beauty of the circumferential envelope causes a suspension of judgment. It is as a whole, as complete works of art, that one contemplates them, admiration for constructional difficulties superbly overcome being only subconscious in the glow of en-

thusiasm. This feeling of the exact fitness (in most cases) of all parts is apt to cause the student to look for models outside the habitual field of vision of builders, that is to say, to ignore what has gone before.

Yet the masterpiece at Blois, the delightful Scala del Bovolo of the Contarinis, with its arcaded and colonetted shell, and each with their convoluted newel, have their prototypes, not in something as intricate as they are, but in the scarred trunk of a palm, the communication pole with its inserted right-angled pegs serving as steps. It is these primitive means of climbing to dwellings placed above the ground for safety's sake that suggested the tube-like stepped shafts of the early builders in stone and brick. The evolution was gradual. It was long before the steep, dark circular staircases were emancipated from englobation in the mass of castle walls, to be enclosed in less circumscribed attached turrets and then in semi-isolated towers. It is perhaps worthy of note here that just when the spiral staircase was beginning to assume greater intricacy as regards the geometric lines of design, in the craftsmanship of actual construction and in applied decora-

tion, there was a partial reversion to the tree type. For we find that towards the close of the fifteenth century special steps were no longer made to carry their own portion of the newel. This central column became a solid, isolated affair, in the circumference of which the narrow ends of the steps were engaged. In fact the steps were nothing more than flat surfaced pegs, though it is true also supported at their external edges.

In England examples of the secondary and intermediate stages of this form of planning are fairly numerous, but for the more elaborate developments we have to go abroad. In these islands the type never reached the splendours that it did in Italy and France. The nearest approach to the liberal proportions and beauty of finish associated with French work must be sought for in Scotland; for instance at Linlithgow Palace with its ribbed vaulted roof, springing from the newel, or at Fyvie Castle, with its vaulted soffit and succession of arched strengthenings.

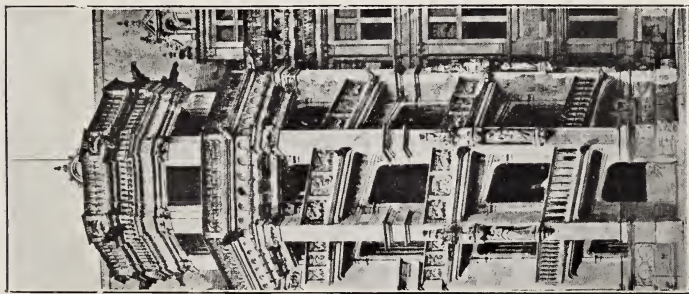
With us probably the most finished specimen is that in Tattershall Castle, Lincolnshire, built by William of Wayn-

flete, bishop of Winchester, for Ralph, Lord Cromwell, Lord Treasurer of England, soon after the first quarter of the fifteenth century. The spiral staircase is in the south-east turret, which is octagonal on the exterior, is 100 feet high, overtopping the castle, is machiolated and crenelated, with a short pyramidal roof and florated finial. It is a spacious affair, the shaft having a diameter of 22 feet with 175 steps. In many details it presents points of great interest to the antiquarian and artist. While it is typical of the architectural style of the period, it is peculiarly local, inasmuch as in contrast to most other examples it is built of brick, not of stone, the variety used being of a small sized, deep colour. But a stone hand-rail, richly carved, is sunk into the brick-work, producing a distinctly pleasing effect. At Kirkby Muxloe Castle, Leicestershire, belonging to the third quarter of the fifteenth century, there is also a brick vaulted staircase with brick steps. One notable point about the Tattershall staircase is that it belongs to the sinistral class.

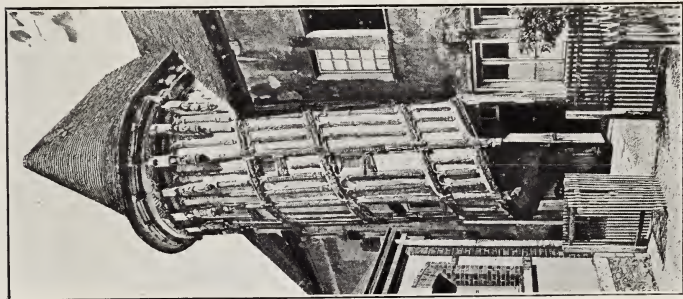
In most circular staircases, the dextral spiral is used. That is to say, the spiral

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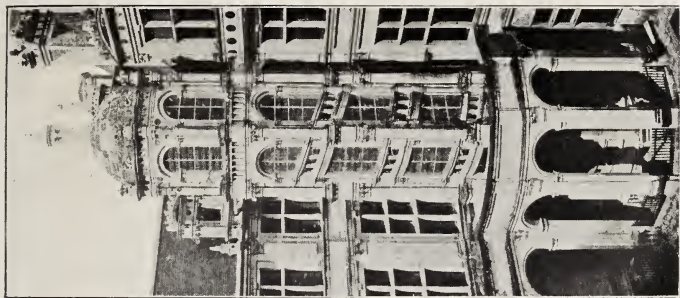
rises from a base point circling upwards towards the right. This is the most constant form of the spiral, like the Archimedean helix and those commonly found in nature. But occasionally the sinistral form, a spiral rising from a base upwards in circles towards the left, are met with in the animal and vegetable kingdoms, and is also adopted by man. The average right-handed man instinctively traces a spiral with curves towards the right, but a left-handed man has a tendency to reverse the order. It has been conjectured that the comparatively scarce sinistral spiral staircases are due to the efforts of left-handed builders who found this method the easiest for them. There is, however, much to be said in favour of the theory that the sinistral curve was designedly adopted as one of the precautionary measures for providing defences in castles. It will be remembered that the circular newel staircases in the old castles were steep and narrow. Now, a man in ascending these would naturally cling to the column. If he were ascending a dextral staircase to the attack his left hand would be seeking support, leaving his sword hand free, while the defenders descending the



(a)



(b)



(c)

EXTERNAL SPIRAL STAIRCASES.

(a) BLOIS, (b) CHARTRES, (c) CHAMBORD.

staircase would have their right hand fumbling along the newel. For defence purposes, therefore, the reversal of this state of affairs had its manifest advantages. Hence the ancient predilection for the sinistral, as we see in Tantallon Castle, West Berwick, and in the various staircases of Blarney Castle, Ireland, built by Cormac MacCarthy about 1449.

At Tattershall we have examples of the external attached turret for containing the stairs. This idea is common, too, in the monastic establishments, where, indeed, it probably originated, which are usually provided with two and very often more staircases. The Abbot's House, close to Wenlock Abbey, Shropshire, has a double gallery along the whole of the west front covered by the overhanging eaves of the roof. At the north end of this gallery is a turret, entered from the gallery, and containing a large spiral staircase leading to the gallery and all three floors. In the middle chamber, the old bakehouse, is a second spiral staircase, of small size, encased in the wall, communicating with the hall on the first floor and a small room in the roof. From the Abbot's parlour to the

south of the hall, a straight flight of steps lead to the Abbot's dormitory placed in the roof.

It must be remembered that this was only a small detached part, though an important one, of the great abbey. It is certain that the main edifice contained many more such stairs. We find that at the Carthusian monastery, or Certosa, near Florence, there are fifteen circular stairs leading from the cloisters to the monks' cells, while the main building is provided with six straight flights, besides its grand double flight approach. In the small Eastbury Manor House, Barking, built in 1572, there are two octagonal turrets, placed in the inside angles of an interior court, and rising high above the roof. They contain newel spiral staircases, the steps engaged in the newels. One of the staircases has a handsomely carved handrail sunk in the brickwork, as in the East Anglian specimen. When, in 1590, Sir Robert Cecil prepared a plan for the proposed reconstruction of Sir Thomas More's house at Chelsea, he provided for five spiral staircases, each placed in an external turret, besides two others with straight steep flights, although the mansion was not to be one of imposing size.

A writer in *Notes and Queries*, remarking on the fact that internal wooden stairs being placed in perforated cages are not uncommon in Continental churches gives some particulars of a singular spiral oak staircase enclosed within a traceried casing. This is at Whitchurch, Hampshire. "In the south-west inner angle of the tower," he says, "is a curious spiral turret, leading to the belfry. The steps are of solid oak, the soffites neatly worked; they are enclosed by an octangular casing of woodwork, quaintly rebated together, and banded at certain heights by an ornamental string-course, each stage thus separated is pierced by small coupled windows and quatrefoils, where necessary, to give light to the stairs." Far more instructive examples are to be seen at the south church at Shoreham, Sussex, where two great pillars are really hollow newels, containing spiral stairs leading up to the galleries. Something of the same kind is to be seen at St Albans Abbey Church.

In Italy, where the liberal arts were assiduously cultivated, staircases on a large scale were common. The external approach was as common in the Peninsula

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as it was with us, although such approach was more often from an internal courtyard. Their Romanesque and early Gothic buildings were also characterised by staircases contained in the enormously thick walls, but with them the straight flight, or combination of such flights, was more frequently met with. In the matter of spirals, the Italian architects achieved marvellous works of art. It is significant of the people and their views on life that while many of these treasures are anonymous, quite a fair proportion of them are known to be the creations of famous artists, especially those of the Renaissance.

We have already referred to the zigzag method of stepping a declivity. From the nature of most of the local topography this and kindred devices were constantly resorted to by the Italians. One of these is quite typical of the country and is known as *scala cordonata*, or *a cordini*. This was an inclined plane, with broad steps, having a rise of from as low as one inch to perhaps four at the utmost, each step inclined somewhat downwards, often unpaved and merely marked by a stone kerb, or string course of cobbles, which represented the

"cord." Used for the most part as an approach up a hill or mountain side to the town or some particular building, the principle was that employed thousands of years earlier in Syria. It was capable of being applied spirally, as we see to this day, in the very ancient stepped ways to the rock villages of the Riviera, highways which described a complete ascending circle round the more or less conical hills, as, for instance, at Eza, just below the Cornice Road near Beaulieu.

Examples of this spiral plane are to be seen in the Campanile of St Mark, Venice, the Palazzo San Martino, Viterbo, and the Chateau d'Amboise, built under Charles VIII. The celebrated Venetian Campanile, begun in the tenth century, is composed of a tower within a tower, and between the inner and outer shell a spiral inclined plane was contrived, rather difficult and steep, only one step to each revolution being provided. In this it differed widely from those at Viterbo and at Amboise, up which a fully armed knight could ride at ease, and, indeed, at Viterbo a carriage could be driven from bottom to top.

In Venice there is a beautiful spiral stair-

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case, the Scala del Bovolo, in the Palazzo Contarini, ensconced in the Corte de Maltese at the back of the piazza Manin. It is contained in a circular stone turret, with open arcades, and is annexed to the arcaded façade of the palace. The approach is from the ground floor arcade, by a straight flight of steps under the gallery, and rises to about half-way up the first floor. It is supported on diminishing arches and has a balustrade of cylindrical colonettes and a heavy handrail. The staircase is of the newel type, a thick column rising from the base to the roof, into which the steps are engaged. The great beauty of this staircase is that the arches are supported on small slender columns with capitals. These rest on stepped stone bases, so that there is a broken line at the base, rising spirally, with an ascending series of arches. Behind these colonettes appears the carved handrail resting on its circular balustrade, this internal line describing an even spiral. While the façade of the palace has four upper arcades, the staircase has five complete revolutions, with a horizontal colonnade at the top and bottom.

An open colonnade is also used on the

Leaning Tower of Pisa, only in this instance the arcading, in seven storeys, does not follow the internal spiral, but is horizontal. In place of the delightful upward circling continuous lines, we have a series of colonnaded tiers, one above the other. It is extraordinary how this arrangements breaks the continuity of the design and produces a rather commonplace result. Yet in mere magnitude and complexity of problems the Pisan example out-classes the more charming example of Venice. There is much, however, that is very remarkable about the tower at Pisa and its helical staircase. This campanile is 179 feet high and is fifteen feet out of the perpendicular. It is to be noted that above the third floor there is a rectification of the inclination, a slight return to the vertical by a cunning arrangement of the lengths of the colonnades, this twist being still more pronounced in the smaller topmost storey. According to Varsari, and many who have followed him, the leaning is due to faulty foundations, the subsidence having declared itself soon after the commencement of the work by Guglielmo and Bonanno about 1174. It is said that noticing this they endeavoured

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to rectify the inclination. It has been generally supposed that the tower leans more and more as the centuries roll by. Many have disputed this theory, maintaining that the divergence was not a matter of accident, but intentional on the part of the architects, who wished thus to draw attention to the campanile of the church from the forest of other towers in the proud city. It is to be noted that several other buildings in Pisa exhibit a similar leaning, while towers in various parts of Italy do the same, notably the Garisenda tower at Bologna, which is 163 feet high and 10 feet out of the perpendicular. However, when the staircase itself of the Pisan tower is examined, it sets everything at rest and justifies the twelfth century architects. According to measurements taken by experts sent by the Brooklyn Museum it now appears that where the line of greater slope exists the soffit of the staircase has been deliberately increased in height, while the downward dip was so arranged that it threw the weight of the tower off the overhanging side. No such precautions are taken above the critical place. If the architects had really set themselves the task of rectifying the error,



SPIRAL STAIRCASE AND LANDINGS, FROM MORLAIX, FRANCE.

this precaution would have been accentuated in the higher storeys. It seems clear, therefore, that the leaning was intentional, and we can only wonder why this serious complication in design and construction should have been adopted. We have not only the horizontal arcades, but the internal spiral with its peculiar twist. Had the architects made the arcading follow the spiral staircase, not only would we have had added beauty, but their purpose in extraordinary designing would have been made more manifest.

At Rome, Bramante built a spiral staircase connected with the Belvedere at the Vatican about 1444. It is an isolated tower, characterised by a daring mixture of orders, but so well blended that the effect is far from displeasing, though it led to very bad results with less gifted imitators, who, untrammelled by the Gothic feeling, gave way to extravagances. The staircase itself almost partakes of the character of an inclined plane, so broad and easy are its steps that a man on horseback could walk up and down them.

Another celebrated staircase of this kind is that built about the middle of the 16th

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century by Giacomo Barazzi, called Il Vignola, in his curious pentagonal castle of Caprarola. It is of an almost pure Doric style, nevertheless it is far less pleasing than Bramante's irregular masterpiece. In the palazzo Barberini, Rome, there is a very fine elliptical spiral staircase, attributed variously to the Cavalieri Bernini and to his sometime pupil and unfortunate rival, Borronomi. It is of the Doric order, with coupled columns placed on pedestals, and handsome balustrade, is oval and rather suggestive of Vignola's work. Certainly the work is far more in the style of Bernini than that of Borronomi, and if by the latter, it belongs to his earlier period, before he had given way to the madness of the Renaissance extravagant medley and decadence. Possibly the original design may have been by him, though the work was carried on by Bernini, as, indeed, happened in other cases. Belonging to the succeeding century the spiral staircase by Martino Lunghi in the palazzo Borghese is equally worthy of note.

CHAPTER IV

SPIRAL STAIRCASES (CONTINUED)

THERE can be no doubt that the great opportunities offered in spiral staircase construction for the display of skill in planning and decoration, contributed to their popularity and retention long after changed conditions had made other and more commodious systems perfectly feasible. The persistence of custom had, of course, much to do with their multiplicity in all countries, but it is evident that architects, even when they secured a freer hand and had more space at their disposal, revelled in dealing with the problems involved, and even in increasing their complexity.

Coming to France, we find many very remarkable spiral staircases, some of which fully bear out this statement. Possibly one of the oldest, apart from those in the

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Romanesque *châteaux forts*, and certainly a most interesting specimen, is the Gothic half-timber construction placed in a court of what is popularly known as La Maison de la Reine Bertha, at Chartres. It is considered to belong to the fifteenth century.

This staircase is contained in an external turret, practically corbelled, for the lower end of the spiral, and the entrance, is placed on the inside. The internal course of the spiral is expressed externally by curved timbers, and the outer side of the string course. Of these curves there are four, including the base. The surface is also divided up by numerous vertical beams, mostly resting on the string timbers, but the main beams, to the number of three, are carried from top to bottom, and are terminated by pendants, carved in the form of grotesque figures. Sculptured figures act as corbels to console beams supporting the moulded frieze beneath an overhanging pointed tiled roof. This staircase is lighted by a series of square windows. It is of the newel type, and has 36 steps.

Of more striking appearance is the early Renaissance spiral stone staircase, probably belonging to the sixteenth century, in the

mediæval chateau of the Comtes de Dunois at Chateaudun, Eure et Loire. It is contained in a semi-isolated turret of five storeys, and is of newel type, having a massive stone column from base to roof. Two archways give entrance to a broad flight of easy steps, the soffit of the spiral being plain vaulted, but at the top of the lantern the vaults sink down on the newel, with numerous branching mouldings resting on a series of colonettes against the exterior wall. On each of the five storeys there is a spacious landing, with arched windows and handsome balustrade, each of the storeys differing somewhat from the others. The whole design is Gothic in conception, though the decoration belongs to the Renaissance, but without undue exuberance. The decoration is confined chiefly to the newel and the balustrading. Great variety is shown in this, the spiral lines of the string course of handrail and moulding under the soffit blending well with the vertical lines.

This exceptionally spacious and beautiful staircase is strangely suggestive of the one at Fyvie Castle, already referred to. The latter, however, is plainer, without arcaded landings, and the space between the steps

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and the soffit is less, giving the section of the newel a somewhat squat appearance. Broad horizontal bands of foliated carvings are carried round the newel at each turn. The soffit consists of a series of low arches with strong mouldings supported by corbels, and moulded panels. On the outer circumference, under each arch, are carved armorial shields.

To return to France, we have records of a fine spiral staircase contained in the tower attached to the Hotel de Bourgogne, Paris. This, too, had a newel, with the roof vaulting curving down upon it. The mouldings represented the trunk of an oak, from which branches spread over the soffit all the way up. This is interesting from the Gothic character of the building (14th century), and seemingly showing a reminiscence of the old timber staircases. That spirals of wood persisted even long after this we have evidence from Mathurin Jousse, that curious writer, excellent mathematician and accomplished master builder and carpenter, who published several useful and learned works early in the 17th century. But stone evidently was adopted when large structures were in question.



BALUSTRADE FROM GREAT ST. HELENS, E.C.

One of the wonders of its time in Paris was Charles V.'s spiral staircase at the Louvre. It was placed in a completely isolated turret in one of the courtyards, being connected with the palace and adjacent galleries by means of arcaded landings. It was three storeys high, crowned by a smaller spiral leading to the terraced roof. Raymond du Temple was the architect, and we know that he found great difficulty in procuring sufficiently large slabs from the Paris quarries for his steps within reasonable time. So he adopted the odd expedient of annexing from the burial ground of the Church of the Innocents the requisite number of tombstones, for which he paid the ecclesiastical authorities, receiving from them due acquittance. It was these *memento mori*, freshly dressed, that did duty as steps for tired royalty and the endless train of courtiers. It was an *escalier à jour*, the exterior ornamented with sculptures in low relief. At the entrance were statues of two men-at-arms, and above were ten figures, each placed within a niche, standing on a pedestal and under a dais. Above these were the statues of Charles V., his Queen, and their sons. Yet higher up

stood the effigies of the Virgin Mary and St John. Shields and other heraldic devices were plentifully displayed. Inside, the vault of the spiral was richly traceried, the bosses bearing shields with the arms of the king and those of his sons. At the entrance to the apartments of the king and queen were two life-sized sculptured figures of sergeants-at-arms. This interesting staircase was long since swept away, it being too "Gothic" in feeling for the later disciples of classicism.

Our knowledge of this vanished part of the old Louvre we owe to Sauval, who takes pleasure to describe such works of art in his "*Histoire et Antiquité de Paris*" (1724). One of these descriptions is of particular interest. He refers to a dual spiral staircase existing at the church of the Bernadins in that city, which was begun by Pope Benedict XII. in 1336. According to Sauval it was a spiral with a double newel, and therefore must have been oval, or some such figure. It had two doors at opposite sides, and appears to have been a combination of a dextral and sinistral helix, for he says that two people could go up and down at the same time without meeting or seeing one another. The staircase was three mètres

25 high, and each riser 25 cm. high. Apparently the steps were wedge-shaped, and engaged in the circumferential shell, as well as the newels, and into each other, for, says our author, "its beauty and simplicity consist in the interlacing, wedging and grooving of these steps one into the other, so that they grip each other in a way which is as steadfast as it is delightful."

This is quite suggestive of the elaborate woodwork mentioned by Jousse. That master in a second book, his treatise on the art of carpentry, gives a diagram and details for constructing a revolving double spiral staircase. The spiral arrangement of steps was placed within a wooden drum, having two vertical openings from top to bottom on opposite sides. Both top and bottom of the newel fitted into sockets, the whole contrivance being placed within a circular shaft, with openings on opposite sides to the various floors. Jousse points out that two persons could enter the opposite openings and ascend or descend without meeting or seeing each other: "Thus it was a staircase common to the building without being common." The peculiarity was that by giving the door a half turn the staircase

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was closed. This would be comfortable enough at night to the person who kept the key. It will be seen, too, that such a revolving spiral might be made to serve three, four or more floors, or apartments, two at a time, and yet still preserve its privacy. It is quite possible that this advantage was quite understood in the large old country chateaux. Violet-le-Duc was puzzled by empty shafts with doorways opening into them, which he found in many castles, until he remembered Jousse's *tour de force*, and then conjectured that these yawning gulfs once contained revolving staircases of wood.

What had pleased Parisians at the Bernardins on a small scale has, on a truly regal scale, astonished and delighted an ever changing crowd of visitors to the chateau of Chambord.

A peculiarity of this chateau is that the ground floor of the main pile is occupied by a vast guard-chamber. Originally it towered up to the terraced roof, thus monopolising the great central body, but quite early, apparently soon after the building was ready for occupation, it was divided horizontally into three parts, by the addition

of two floors. This must be remembered when we consider Charles Trinqureau's wonderful double staircase, which stands in the middle of the chamber. It consists of a right and left spiral, winding round a common newel, crossing each other at regular intervals, but never mingling. Each spiral has a separate, opposing entrance, and serves two vestibules on each floor. It is 30 feet in diameter, has 274 steps, and is contained in an open cage, formed by three series of superimposed pillars, and the circular courses whence spring the four vestibules on each floor. As designed, therefore, the dual spirals, enclosed in their circle of columns, stood out boldly with two crosses formed by vestibules and corridors leading to wings. That must have presented a marvellous vision, a cobweb of stone. Even as it is, the intricacy of the crossing spirals, with their handsome balustrades, the central newel, pendants and the delicate surface sculpture makes the whole most entrancing. As Blondel says: "On ne peut trop admirer la légèreté de son ordonnance, la hardiesse de son exécution et la délicatesse de ses ornements, perfection qui étonne et laisse à peine concevoir

comment on a pu parvenir a imaginer un dessin aussi pittoresque." At the terrace level the two spirals enter a tower of eight colonnades, with columns and pilasters. Above this is a smaller tower, containing a single spiral, really within the hollow newel carried up to the cupola, decorated with a balustrade and eight buttresses carved with large salamanders and crowned F's. This is topped by an open belvedere, surmounted by a handsome cupola, and crowned by a gigantic fleur-de-lis.

Other well-known instances of the dual spirals are those in the Chateau de Pierrefonds, which is supposed to have inspired Trinqueau, at Beverley Minster, and the modern instance, the staircase at the Royal Courts of Justice, London, by the late E. Street. At Pierrefonds the staircase is in an external octagonal turret, the entrance from the courtyard being through low archways, up wide steps.

Chambord possesses two beautiful spiral *escaliers à jour*, contained in octagonal turrets placed in angles of the courtyard, each adorned with three rows of columns and crowned by cupolas and miniature belvederes surmounted by fleur-de-lis. They are

approached from the courtyard through arcaded screens, and the three spiral curves are marked by balustrades. There are eleven other spirals in an equal number of turrets, besides a number of straight flights to serve the nine various wings of this immense building. Trinqureau's dual stairs belong to about 1526; others in the chateau are of earlier date.

Possibly an even more fascinating architectural gem of the fair land of Touraine is the Royal Chateau of Blois, though it has been severely criticised for its irregularity and over ornamentation. It contains two spiral staircases in external turrets. One belonging to the fifteenth century, having been built under Louis XII., is placed in the usual situation, an angle of a courtyard in the old wing. It is a dextral helix with solid newel. This large column is peculiarly treated. Following the curve of the spiral the base is thick for about four feet, and is then turned outward to provide a handrail. Above this are slender columns standing on pedestals, but without capitals, the summits merging into a boldly carved spiral cable moulding, with a rounded moulding above. There is a

considerable amount of decorative surface sculpture, but of a restrained character. Externally, the turret is adorned with handsome columns having foliated capitals, the windows being large and beautiful. In any other mansion it would attract special attention, but is outshone by the charm of the second and more recent staircase.

This second spiral staircase is contained in an octagonal turret placed in the centre of the interior façade. It is a sinistral *escalier à jour*. Built under Francis I., we have some details concerning its construction, but no direct evidence of its authorship. It is clearly the work of a master-mind, artistically being far superior to the dual marvel erected under the same monarch at Chambord. The columns forming the turret are square, with fine capitals supporting a shell decorated cornice, above which is a balcony with carved panels. The lantern tower is a slightly smaller octagon, with pilasters, crowned by a double colonnade and a small cup pointed dome. Each balcony is provided with horizontally projecting gargoyles. The spiral is traced externally by three graceful curves, the lower one showing a balustrade, the upper



GODINTON, KENT.

ones carved panels. The square openings have an upward rake corresponding to the spiral. At some unrecorded date canopied niches containing statues were added to the columns, just above the first balustrade. A piece of baroque embellishment with which one could well dispense. The interior of the tower is circular and contains a solid newel, round which the sinistral spiral winds. Spiral mouldings are curved round the base of the newel, one projecting to form a handrail. Above these are slender square columns, supporting spiral curves. Where the newel blends with the soffit large scallop shells are carved with effective boldness, contrasting with the rather inferior inspiration of the arabesques crowded on newel, balustrade and panels. It is probable that this work of the niggling school of Renaissance belongs to the same date as the added niches and statues. The steps are of solid blocks of stone cut with a delightful outward bow, suggestive of Hogarth's Line of Beauty. Taken as a whole, it is a singularly fine piece of work, most carefully designed in every part.

Mr T. A. Cook in his captivating book on "Spirals in Nature and Art," advances

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strong arguments in favour of Leonardo da Vinci as architect of this exceptional staircase. The Italian genius was undoubtedly in Touraine at about the time that this turret was erected, and in the service of Francis as builder. Leonardo was a left-handed man, his sketch books prove that he was an ardent student of spirals in all forms, not excepting the beautiful combinations formed in shells. Mr Cook not only believes that the Italian designed this staircase and its turret, but was inspired by a study of the *voluta vespertilio*, occasionally seen as a sinistral sport, which is a spiral with vertical bands, corresponding to the curves and columns of the turret. The case made out appears sound, the arguments convincing, and we may accept the conclusion without necessarily subscribing to the much wider claim that builders of spiral staircases were probably often inspired by shells. The resemblance of the Scala del Bovolo in the palazzo Contarini to the shell *scalaria scalaris*, and that at the house of La Reine Berthe to the *mitra papalis*, are almost certainly fortuitous. If we reflect that even these splendid examples have their forerunners

in primitive rock and timber structures, the final forms will appear to us admirable, but not as requiring inspiration outside of the builders' craft experience.

We have already referred to the fairy-like spiral in Mainz Cathedral, the steps radiating from a central newel and carrying on their outer edges colonnettes, which form an enclosing cage. In the church of St Etienne du Mont, Paris, the late 16th century or early 17th century rood screen has a pair of spiral staircases winding round two massive columns; they are respectively dextral and sinistral spirals, not enclosed, but protected by carved panels, the tracery being like broad flat ribbons. In both instances there would appear to have been a conscious symbolism in these graceful renderings of the emblematic ladder. They are as utilitarian and conspicuous as those monumentally more important staircases at Rouen and Burgos, but are handled with a refinement and daring suggestive of the spiritually enthusiastic worker.

A 15th century spiral of a very different character is to be seen at the wooden house near Upsala, Sweden, where Gustavus Wasa took refuge in 1529. In the lowest

section it is an outside open staircase, in two flights parallel to the house wall, with intermediate landing, covered by a lean-to roof, and supported on square posts. The parapet is composed of interlaced slat panels. At the level of the first floor this stairway enters a spiral, contained in a circular turret, half of which projects as a corbel, supported by posts. The second landing at the root of the spiral communicates with an open gallery, and these give access to the house. It is a quaint device, which appears to carry us back to the Abbot of Wenlock's domestic economy, and even to the far away Romanised house in Syria.

CHAPTER V

STATE AND OTHER STAIRCASES OF THE GOTHIC AND RENAISSANCE

WHEN the castle and fortified dwelling types gave place to a less severe style of domestic architecture, Gothic masters were still dominated by the traditions, and, indeed, the practical necessity of designing both mansions and public edifices in a way to render them capable of defence. The quadrangular plan was generally adopted, with an inner courtyard, and the ancient keep was represented by the turret in its varied forms, such as the conically roofed donjons of France, and the square open arcaded belvederes of Italy.

As a rule entrance was provided through a gateway, either an attached porch or a door and vaulted passage, leading into the court. Thence an outside staircase led to

the first floor. Often enough these staircases were placed in an angle, parallel to the wall, as is the case at the Palais des Compts, Paris, and at the Bargello, Florence. In the latter building, the 14th century palace of the podestas, there is a fine and interesting example of Gothic external staircase. The main body of the palace, at the bottom of the court, has an open arcade on the first floor. To this a broad flight of stone steps, placed at right angles to the gallery, against the side wall leads up. It has a solid, sloped parapet, with a stepped course representing the outer edge of the stairs. The pillar, serving as newel, is carried well above the parapet and supports a seated lion. Nearly at the top of the flight is a small landing under a square, crenelated gateway. Thence there is a short open flight to the arch of this gallery. We see here an advance on the old idea of the subsidiary importance of the staircase. Although it is placed in an angle, where it interferes least with the open space, it is given monumental proportions and is treated with a desire to decorative effect.

With the definite recognition of this monumental value, the flights were removed

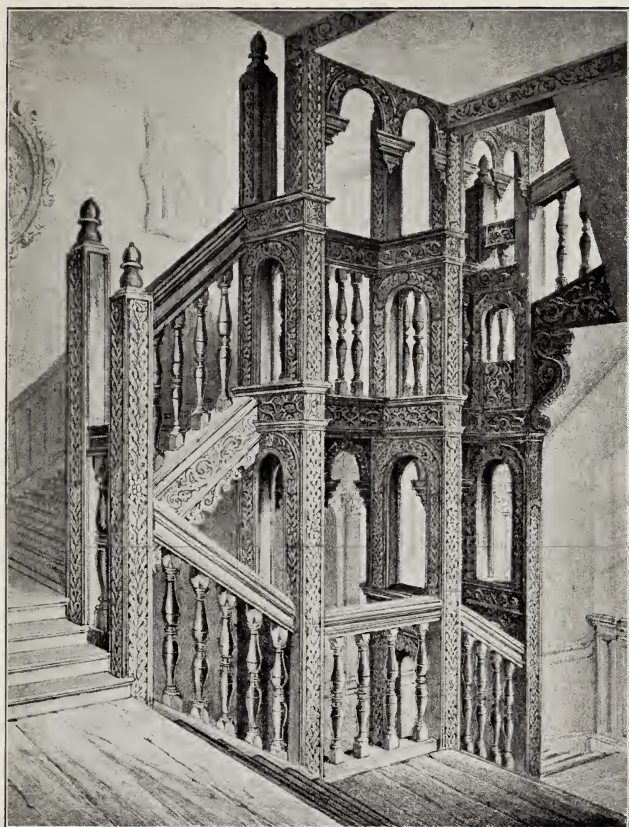
from the lateral walls and placed in the centre of the façade. Certainly early specimens are direct reminiscences of the Romanesque treatment, the single flight clinging to the wall, supported on a solid masonry screen or a series of diminishing arches, ending in a landing placed before the doorway. But even when such flights were large and richly decorated they lacked dignity. Far better results were reached when the flight was either placed at right angles to the façade, or if still clinging to the wall, was duplicated, a right and left flight meeting at a large landing before the entrance doorway.

In Italy and Spain a peculiar modification was early introduced, and in the latter country still persists as a feature of national domestic architecture. The staircase in the courtyard was maintained parallel to the wall, to which it was attached, but placed under the ground floor arcade, thence leading to the upper galleries. This had a two-fold advantage: it saved space and protected those using the flights from exposure to the rigours of winter, but more particularly the glaring sunrays. Moreover, it gave them a semi-privacy. Many of these half

concealed open stairways are spacious, easy of ascent and handsomely decorated. They are sometimes continued from gallery to gallery, and may be let into a recess in the building itself. In the patio of the Archiepiscopal Palace, Alcala de HERNARES, under the back colonnade is a broad, easy flight against the wall, to a landing, then a short flight at right angles to the left conducting to the upper colonnaded gallery. The parapets are often beautifully decorated and boldly carved newels, heraldic embellishments being usual.

Internal courtyards and patios were not always possible, and then, at first chiefly in towns, the external stairways were placed against the outer façade, the single and double parallel and the right angle flights being adopted, sometimes conducting to a mere landing, at others to a terrace or arcaded gallery. Many fine Mediæval examples are to be seen in Italy, France, Germany and Flanders. The Flemish hotels de ville alone afford an extensive and varied series, some of them taking the form of open-air tribunes or reception ante-chambers to the grand halls.

It was not only in Italy and Flanders that



BURTON AGNES.

the outside staircases to first floors prevailed to a late date. The style was persisted in by the citizens of many other countries even in great cities. For instance, at Lyons it was necessary as late as 1604 to pass a bye-law prohibiting the building of any new outside staircase of wood. Structures in more permanent materials were not at that time forbidden. It is both curious and interesting to find this fashion persisting largely in New England, in connection with the "Colonial" style of architecture, partly as a reminiscence of old feudal England, but quite as much owing to Knickerbocker influence.

The practice of placing external stairways under the arcaded galleries of a cortile, even in a recess in the wall at the back of the colonnade, seems to have suggested the grand staircase on a monumental scale. These differ widely from the Romanesque conception, for they are not adjuncts or even encysted parts, but integral to the planning, and main features therein.

What may be considered a transition type is to be seen in the celebrated Scala dei Gigantic in the Ducal Palace at Venice. This is a spacious flight in the magnificent

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inner courtyard. It is a broad flight of marble steps, divided into two sections by a platform, and conducts to a landing under the loggeta, in two storeys, the arcading supported on slim columns. It was designed early in the 15th century by Antonio Rizzio, and decorated by the leading artist of his and the succeeding period. The steps themselves are inlaid with decorations in lead. The parapets and every part of the structure are a mass of fine sculpture due to Domenico and Bernadino da Mantua. This decoration consists of arabesques of the early Renaissance period, a glorious embroidery of floriated scrolls, sometimes merging into beautiful winged figures and birds, intermingling here and there with Vitruvian scrolls, cornucopias overflowing with fruit, and strongly carved lion's marks in allusion to the winged emblem of the Evangelists, the cognisance of the Republic. There is a sparing use of vases and architectural features, with rare military and naval trophies. Much of this was gilded, and the touch of brilliant colour was not wanting. At the head of the stairway are colossal statues of Mars and Neptune (the genii of the amphibious

Republic), due to the chisel of the inimitable Jacopo Sansovino. It was at the head of this superb flight of steps that the Doges were crowned, standing between the Gods of War and the Waves, surrounded by his richly habited Court and in the sight of the gaily robed nobles and valiant captains, filling the yard below and crowding the colonnaded loggeta.

Of truly internal staircases this casquette of many marvels encloses a large number, the most memorable of which is the Golden Staircase, with its two parallel flights, whose barrel vaulted soffit loaded with Vittorio's heavily moulded stucco glittering with gold, often with rich colours, and framing brilliant hued paintings by Francesco and others, has been described in the first volume of this series (CHAPTER VI. "Ceilings and their Decoration,"). The walls are a continuation of the stuccoed ceiling embellishments, blending with the heavily carved marble balustrade and broad handrail.

But to retrace our steps. Gothic builders could not, of course, leave staircases undecorated, for every feature of a building was made the object of consummate craftsmanship. Whether wood or stone was employed,

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or even brick, newels, strings, balusters and handrails were all lavishly carved, often with beautiful tracery, in which colour played its part. But as a rule these internal stairways were placed parallel to walls, and in a large measure, hidden. Here and there were to be found fine flights leading from the hall to upper galleries. More frequently, however, these were tucked away under the galleries or enclosed behind screens. An exceptionally beautiful example of this last method of treatment is to be seen in Rouen Cathedral, where the open alternating flights of the fine library staircase is shut off on the ground floor by an elaborately carved screen between towering columns, the upper flights, with their tracery panels, showing through the forest of flying arches and columns. A beautiful specimen of this application of Gothic tracery is shown on the plate facing page 110. It is from the collection at the Victoria and Albert Museum. This was the screen to a staircase leading to a rood-loft. While in this instance the closely and deeply-carved panels are of solid wood, the panels were frequently pierced, almost always so when of stone. Similar screens were

also constantly used in domestic architecture.

In the fine Maison de Jacques Coeur at Rouen there is an interesting Gothic staircase, showing influence of the Renaissance.

In the Victoria and Albert Museum there is an oak newel semi-spiral staircase, with side galleries complete. It comes from Morlaix, Brittany, and dates back to the 15th century, but is almost purely Gothic in feeling, though rude in execution. The steps are solid, wedge-shaped pieces of timber, winding upwards to serve three short lateral flights, starting from landings and conducting to open galleries. The outer newel, forming a conjunction between the spiral staircase and the galleries, is a single balk of timber, from top to bottom, faceted, and decorated with diamond carvings, like the notches on a palm tree. On the lower section there is the carved figure of an angel holding a shield, and at the springing to each landing a figure in ecclesiastical garments is placed in a niche. Towards the upper part a change takes place in the diamond notchings, which develop into layers of well-formed leaves, the layers neatly overlapping one another.

A relatively similar variation in decoration is to be seen on the uprights of the rood-loft staircase screen just referred to, a point which appears very suggestive. At the level of the galleries collars of leaves ring the newel, and attached to these wreaths are grotesque masks, and midway between the landings are two heraldic shields, surrounded by cordeliers. Right at the top of this huge beam is an upright figure in flowing ecclesiastical attire. The galleries have outer panels decorated in a rude fashion with linen fold carving. At the top of the handrail of the stairs leading from landings to galleries are grotesque squatting figures, and at the end angles of these galleries are boldly carved animals, also grotesque. Undeniably in design this staircase with its attached galleries is excellent, giving good service, picturesquely, without taking up much room. Almost every inch of the structure bears witness to the anxious care and enormous manual labour in decorating what must have been one of the most prominent features in an important house, but as regards finish and detail, it is decidedly heavy with the signs of decadence.

A staircase having not a little affinity with the above, though far more primitive in design and workmanship, is described by Britton when dealing with Moreton Hall, Cheshire, which was built about 1559. A gallery running along the south side of the house on the third and topmost floor was reached by a spiral staircase winding round "the trunk of an immense oak tree, which is sunk in the ground," which brings us very close to the pegged tree boll referred to in our first chapter. Moreton Hall, by the way, was a structure of wood and stucco.

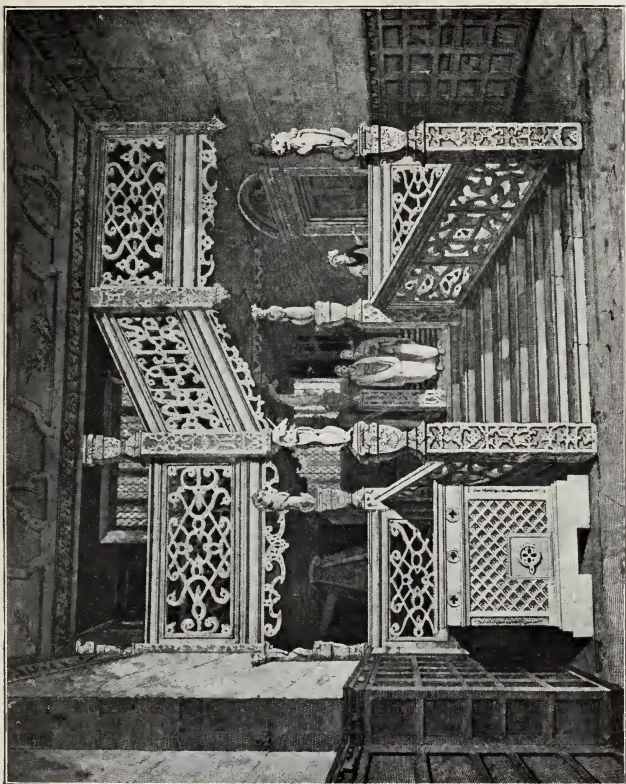
Undoubtedly the Renaissance, whatever its faults, did much to add to the dignity of the staircase, and, speaking broadly, the refinement of its decoration.

Great as is the beauty of the library stairway in Rouen Cathedral, it would be difficult to surpass in impressiveness the stairs of the Puerto alto de la Coroneria in Burgos Cathedral. This 16th century work of Diego de Silve leads from the transept to the north door, thirty feet above the floor level. A short flight of twelve broad marble steps, the lower four bowed gracefully outwards, leads to a landing. Thence spring outwardly a flight right and

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left, each reaching a landing and then turning inwardly to the top landing fronting the great carved north doorway. At the top of the first landing, under an arch beneath the great portal, is an altar. A marble balustrade protects the approach flight, and couchant on these, heads downwards, are two lions. The upper flights have balustrades of most marvellously elaborate iron work, wrought by Cristabal Andino.

The same striving after spectacular effect is noticeable in much of the Italian work. Palladio included among the desiderata he had laid down for the construction of staircases in the neo-classic buildings the following points: that they should be well-lighted, spacious and easy to mount. For attaining the last-named point he held that the staircase should be twice as long as it was high. Even if this ratio of inclination was not always maintained, it was an ideal kept steadily in view. Sometimes this was done at the cost of an undue multiplying of the flights, arranged in successive alternating or parallel flights, divided by halfway landings, which the French descriptively name *paliers de repos*. In such cases there was a return to the Mediæval practice. As



CREWE HALL.

a rule, however, the long flight of easy gradient was adopted. The Scala d'Oro in the Doges' Palace, Venice, may be instanced. The magnificent marble staircase, adorned with antique statues, has thirty steps, each of a single piece of marble, nearly 10 feet long and over 2 feet broad. Often odd devices were hit upon to add character to the construction. In the vestibule staircase of the Biblioteca Laurenziana, Florence, designed by Michael Angelo and carried out by Giorgio Vasari, we find a threefold flight, placed abreast. The middle one, with bowed steps and voluted ends, passes up between marble dwarf pillar balustrade and handrail to a narrow landing, then a short, single flight, with the marble balustrade resumed, leads to the door. The outer flights are broad, unprotected steps, and were possibly intended as pedestals to be occupied on grand ceremonial occasions by halberdiers, or lacqueys holding wands or lighted torches. This seigneurial method of illuminating, adopted alike in the old castles and the later Renaissance mansions, must have added wonderfully to the picturesqueness of gala nights, when men vied in glory

of coloured silks and velvets, the glitter of gems and gold, with the fair ladies. Some reminiscence of these stairway attendants has been kept up by the use of sculptured or pictured figures. As we have seen, Charles V. had effigies of sergeants-at-arms guarding the landings of his external spiral staircase at the Louvre, and we see the same idea carried out with the splendidly modelled life-sized mounted men-at-arms at the foot of the grand staircase in the Hotel de Ville, Paris, holding, in place of lances, lanterns on the top of poles, or, in a rather more *banal* way, the modern classically draped figures of Truth or of Virgins, standing on the newels, or in alcoves on halfway landings, holding aloft lamps or electric torches. But we find the idea of attendants on duty on the staircases carried out in various ways right through the centuries. Even the heraldic and symbolical beasts so used have a somewhat similar value. We saw in the lower balustrade of the staircase in Burgos Cathedral the two crouching lions, placed there, of course, in deference to the Scriptural allusion to these beasts and to St Mark. On the staircase of the University of Genoa, we

also see a lion much in the same position, only here the full-sized king of beasts is shown crawling down the inclined plane. In the much later Palazzo Reale, Caserta, there is a pair of colossal lions standing upright. On a smaller scale they were very popular with men of the Tudor and Jacobean periods, dispersed among human figures of all sorts, disporting themselves on the newels and handrails.

It must be remembered that at the beginning of this period, as already mentioned in the previous chapter, a number of staircases to every house of any pretensions was the rule. The diversity and sumptuousness of these is well brought out by that prince of satirists, François Rabelais, who in his description of the Abbey of Thelema says : "In the midst there was a wonderful scali^{er} or winding stairs, the entry whereof was without the house, in a vault or arch, six fathoms broad. It was made in such symmetry and largeness that six men-at-arms with their lances in their rests might together in a breast ride up to the very top of all the palace." Apart from this, however, "between every tower" (there were six of them), "in the midst of the said

body of building, there was a pair of winding, such as we now call lanthorn stairs, whereof the steps were part of porphyry, which is a dark red marble spotted with white, part of Numidian stone, which is a kind of yellowish-streaked marble upon various colours, and part of serpentine marble, with light spots on dark green ground, each of those steps being two-and-twenty feet in length, and three fingers thick, and the just number of twelve betwixt every rest, or, as we now term it, landing-place. In every resting-place were two fair antique arches where the light came in, and by those they went into a cabinet, made even with and of the breadth of the said winding, and the re-ascending above the roofs of the house ending conically in a pavilion. By the vyze or winding they entered on every side into a great hall, and from the halls into the chambers."

The great fault of many early disciples of Palladio, and even of the giants of the Renaissance, was to exaggerate the part played by the grand staircase, and therefore the space to be occupied by it. No longer relegated to turrets, or made to cling to lateral walls, the staircase was placed right

in the middle of the building, often occupying an immense space, and splitting the edifice in twain, thus adding to the perplexities of planning. The difficulty is well overcome at the Doges' Palace, because there the old notion of the central courtyard is maintained, and the grand staircase is built mainly at the expense of this open space. But it was not so with other palaces in town or country, and the disadvantage was keenly felt in France, where Mdle de Rambouillet insisted that her new house in Paris should be provided with a grand staircase not in the middle, but at one side. By this means, while access was just as easy, a better suite of State apartments could be arranged on the first floor. The innovation had a lasting effect, as far as classic architecture and what came of it was concerned, but while proving an advantage as influencing planning, the style later degenerated into the habit of providing one main staircase for the general use of the whole house, with a small back stairs for domestic service. This was in every way an inferior arrangement to the provision of a grand stairs to the first floor, with shorter flights thence to the upper floors,

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and one or more service staircases from top to bottom, the method which was retained by builders of the Tudor and Jacobean styles.

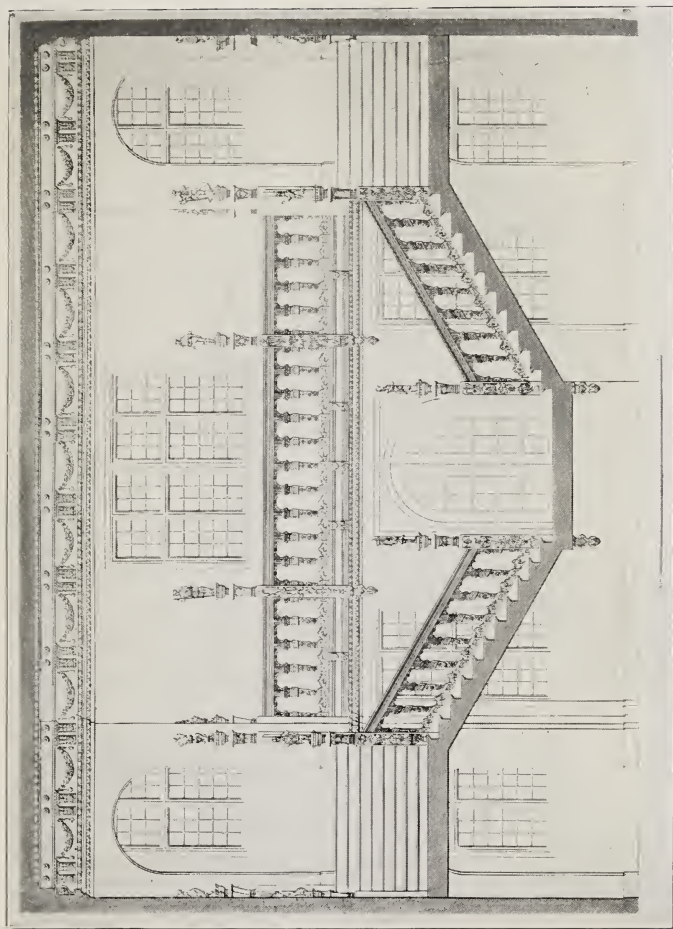
CHAPTER VI

LATER RENAISSANCE DEVELOPMENTS

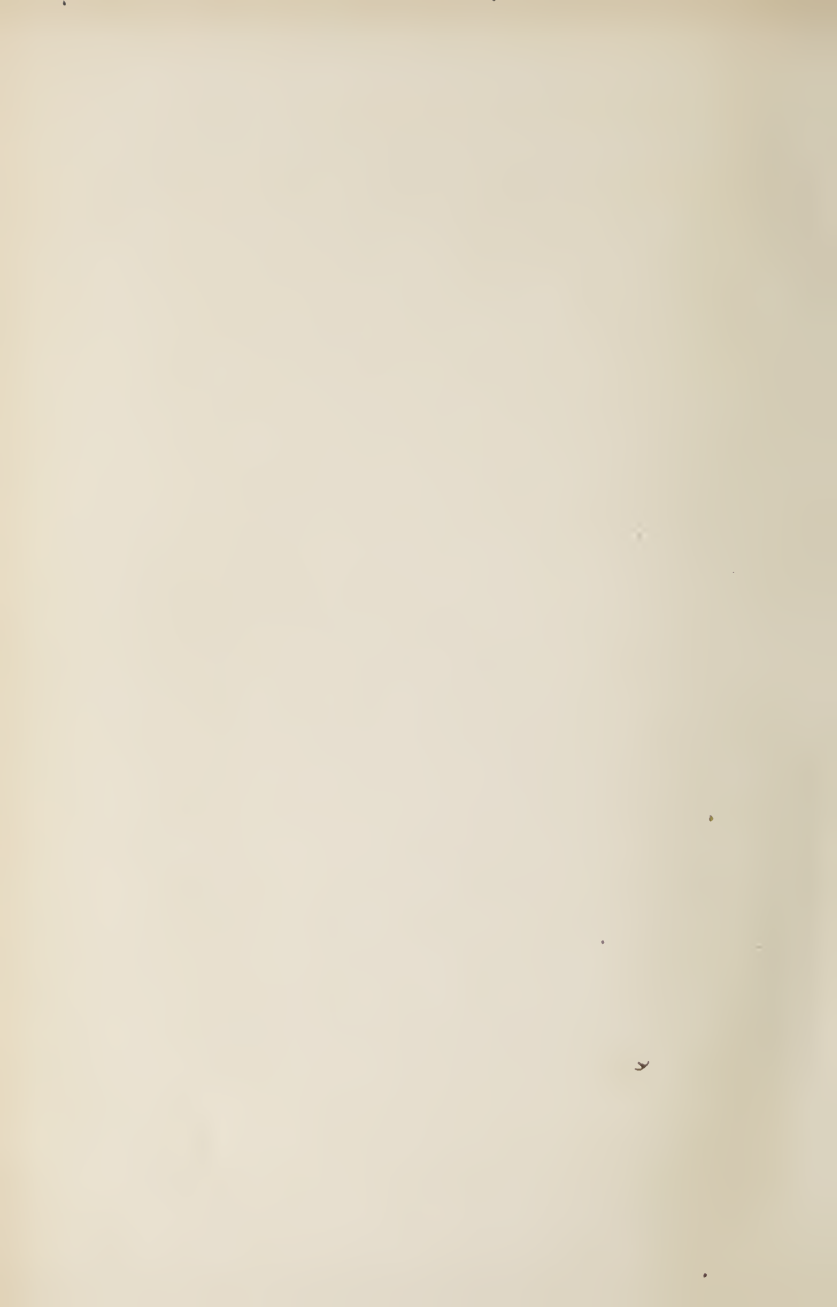
WITH the 17th and 18th centuries there came a pronounced modification of the Renaissance style. This was owing to the influence of Palladian teaching, with its often pedantic insistence on mathematical precision in the matter of proportion, and the necessity for close adherence to the purity of the orders. The net result was frequently far from classical in feeling, because a system of measurement by rule was necessarily less true to an ideal than rule of thumb methods. The strictly scientific mind was doomed to miss much that gives life to Greek art, the secret of which, although intuitively grasped by the pioneers of the Cinquecento, and utilised according to their lights, has really been revealed only to our generation.

However, the effect of this change, as far as concerns staircases was, broadly, to enhance their monumental value, while bringing greater regularity, combined with a simplification of decorative detail. This was usually achieved with some loss of originality, and without a compensating gain in grandeur, while the restriction of surface decoration did not always connote lightness and elegance. The products of the fertile imagination and almost impatiently facile manipulation of a Sansovina, the heterodox handling of the orders by a Bramante please the eye, and have a gossamer appearance when contrasted with the coldly uninspired handling of perfectly unimpeachable columns, archways, pediments, and cornices. Too much of the work of this period lacked inspiration, and is consequently heavy.

One of the show specimens of this phase is the Scala Regia, built by Bernini at the Vatican. It has four flights of broad, easy marble steps, adorned with double rows of Ionic columns, each cut from a single piece of beautifully coloured marble. Much is gained here by the vista of tall pillars, the blend of various colours and judicious gilding.



BLICKLING HALL, NORFOLK.



Imposing in a way, but belonging to a different order of things, is the Scala Santa, leading to the Church of St John in the Lateran Palace. This is a construction of the 16th century, Pope Sixtus V. having entrusted the rebuilding of the Palace, Church, and monastic establishment to Domenico Fantana. It is a five-fold straight flight. The middle, the actual sacred stairway, has 28 stone steps, encased in wood, which are said to have been brought by St Helena to Rome from the Palace of Pontius Pilate, and to be those up which the Saviour walked. On either side of this are two flights of 39 steps, and then two outer flights of 35 steps each. In the lateral walls of this staircase are two narrow concealed stairs, leading in the reverse direction from the Church to the monastery.

In the palazzo Barberini, Rome, we find a most interesting contrast in staircase designing. The palace was built by Pope Urban VIII. on plans prepared by Carlo Maderna, many of the details being entrusted to Borronimi, and others to Bernini, who, indeed, completed the work. On entering a long vaulted vestibule, divided longitudinally by a row of columns, to the

right is a large oval spiral staircase, the designing attributed to Borronimi, though the execution is probably due to Bernini. This has been already referred to in the preceding chapter. To the left is a broad flight of straight marble steps, carried round a large square, open, pillared cage. This is due to Bernini. At the back of the vaulted hall are three arches, admitting to an inner semicircular vestibule. At the farther end are three broad semicircular steps, beyond which are three broad steps leading to an oval staircase, with right and left flights, ending in straight flights to the first floor. There are subsidiary staircases in other parts of the palace, as shown on plans given here. (Plate facing page 204.)

Of much later date, but probably the most strikingly handsome staircase of its class in Rome, is the work of Cosimo Morelli, and is found in the Palazzo Braschi, which he built for the Duca di Braschi, nephew of Pius VI. It is composed of long, easy alternating flights, connected by short flights and landings at right angles, the open cage thus forming an oblong. It had vaulted soffits, supported by tall, slender columns of Oriental red granite, and corres-

ponding pilasters, standing on square bases, and adorned with small capitals of acanthus. The walls are panelled in marbles of varied and rich colours, while the broad, nosed, steps, wide flat-topped handrail and balustrade of diminishing fluted columns are of pure white marble. At the top of the staircase is an open gallery. The soffits of the arches and staircase are decorated with richly coloured arabesques and paintings. It presents a happy blend of Renaissance decorative treatment with the Palladian style.

Before leaving Rome we may deal briefly with two excellent plans of modern work, given by Le Tarouilly, and one of which is reproduced in this volume. The first plan is that of a small 18th century mansion on the piazza di Campo Marzo, attributed to Giovanni Stern. Facing the entrance of a small, severely plain, ovoid vestibule is a flight of straight stairs, carried up between pilastered walls, with square panelled soffit. At the top is a landing with balustrade and trelliswork, looking out into the court beyond. Not quite half-way up the first flight is a landing, with recess to left and right, that on the right giving access through

an arch to a corridor. The balustraded landing is carried well to the right, and here a second flight leads to the upper floor. There is a service staircase of alternating flights, on the right of the vestibule, with its own entrance from the street, and a small spiral stairway approached from the outside by a long passage. It is quite an excellent treatment. Equally happy in its way is the other example given to Le Tarouilly. It is a combined plan of the palazzo Maccaroni, in the via Margana, with a house at the back, and wedged into the mass in a most awkward fashion. Entering the mansion an open courtyard is seen to the left, while straight in front a vaulted passage leads to a staircase with easy flights, open balustrading showing a clear view of the hills beyond. The staircase in the other house is cleverly placed in the impinging wedge, which would have been almost useless for any other purpose. This plan also offers much to admire in the ingenious way with which very considerable difficulties have been overcome.

In the 17th century palazzo Durazzo, Genoa, designed by Bartolomeo Bianco, we see yet another way of carrying out

that favourite Italian notion of connecting a good perspective view with the staircase. In this instance the broad flight of stone steps leading from the outer vestibule to the inner hall is carried up between two walls, the groined soffit supported by two rows of three columns placed on square bases.

Luigi Vanvitelli's staircase of honour in the palazzo Reale, Caserta (18th century), is chiefly remarkable for the very long, easy flights, the broad steps having very low risers. There is a single flight to a fine half-way landing, then a right and left flight to the State apartments. The balustrade is broad and rather low, the newels being represented by square pillars, buttressed by reversed voluted consoles. On pedestal projections from the midway landing are two colossal lions looking down the first flight. The whole construction is in marble. In the palazzo Madama, Turin, also of the 18th century, Filippo Juvora has a right and left flight rising to a midway landing, then return right and left flights to the main landing. The soffit is vaulted. Here the marble panelled walls are decorated with mouldings, the

newel pillars, topped with grotesque lion heads, blending into foliations. The entrance vestibule is adorned with columns. This arrangement was much favoured at the period, and may be seen in a somewhat simplified form at, among other places, the Brera, Milan.

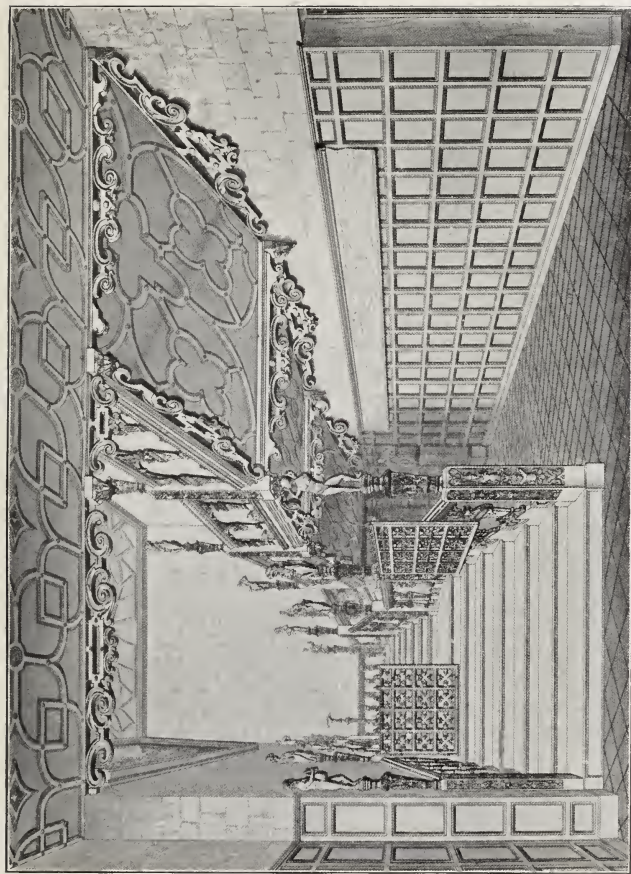
In France the Renaissance influence quickly made itself felt, first by a more or less florid decoration of the domestic Gothic, with gradually increasing introduction of classic columns, pilasters, pediments and so on, and then by a decided adoption of the Italian masters' teaching. Palladio had always many admirers, who founded a distinct school, with such disciples as the Mansards, uncle and nephew. The latter was an adept in the "grand manner," well suited to his patron, Louis XIV. A characteristic piece of his work was the great marble staircase, known as the "Escalier des Ambassadeurs," at the Palace of Versailles.

Spaciousness, richness of materials, boldness in design, and the gorgeousness of decoration, all combined to make this staircase, on which Mansard and Lebrun lavished their best efforts, a conspicuous and

much talked about monument. As the two artists left it, it was undoubtedly imposing, the massiveness of the treatment of varicoloured marbles and beauty of the mural and ceiling paintings, making it very impressive. It was a fitting frame for the crowds of bewigged, richly dressed courtiers and ambassadors, and like them, not without a pretentiousness that called for criticism. This staircase was placed in the last pavilion on the right in the second court. The vestibule, entirely lined with marble, was 39 feet long by 13 feet wide, the ceiling enriched with scrolls and war trophies in gilt bronze, the doors of wrought iron resplendent in gold. Passing up in flights of three wide steps through three archways, the staircase hall was entered, also panelled in coloured marbles, and with a most elaborate geometrically designed marble floor. Mansard began his staircase with eleven steps, forming the half of an octagon in plan. Quite elaborate, but by no means so pleasing as would be semicircular or semi-elliptical steps. These lead to a landing, with a fountain under an alcove, and above a bust of the Grand Monarque. Right and left broad flights of steps, twenty

to each flight, conduct to the gallery giving admission to the State apartments. The balustrade, designed by Caffiari and Lespagnaudel, was composed of a broad, flat, gilt bronze handrail, supported by broad panels of marble and columnar balusters in gilt bronze, given inelegantly enough, an upward rake corresponding to the slope of the stairs. There was a considerable amount of ornamentation, trophies, and so on, which, as well as the capitals of columns and pilasters, were in gilt bronze.

Lebrun's decorative and painting work was happily conceived and splendidly carried out. Using architectural members and perspective drawing, he managed to add vastness to the hall and give it an atmosphere of grandeur. Round the hall he painted an open gallery with balustrade. Two of the openings appear over the staircase, and two others opposite to these. Rich draperies hang over the balusters, and grouped in the open spaces are representative men and women of different countries of Europe and America, and of Africa and Asia. Behind appear columns and far vistas of sky and hills. Then there were panels containing pictures of four of Louis' most renowned



HATFIELD HOUSE.

battles, and others filled with classic war trophies. Above this he placed a projecting cornice of coloured marbles, enriched with heavy ornaments in gilt bronze. Standing on this were twelve termini, supporting a second cornice of the Corinthian order. Between the termini were paintings of allegorical figures mingling with symbolic decorations, while over the open galleries were further galleries, with sky behind, showing the columns and soffits in perspective, while gorgeously plumed peacocks trail led their tails over the balustrade. The ceiling is an elaborate affair, carried on short columns, for the admitting of light, and most gorgeously decorated with designs in high relief, all richly coloured.

It was a much admired staircase, and often more or less closely imitated. Perhaps the best known of these adaptations was carried out in quite modern times, in 1878. It is of vari-coloured marbles, and is in the Herrenchiensee Palace, built by Ludwig II. of Bavaria. It has an outer vestibule and a staircase hall approached through archways. A broad flight of steps leads to a landing with a fine group of statuary under a recess. Thence there are broad, easy

flights to right and left to open landings, with handsome balustrades. Columns and archways are seen at the top of the hall, with perspective views seen through the colonnade. The prominent cornice of Versailles is repeated, and a second cornice supports statues.

Another specimen of late French Renaissance which has found many admirers and has inspired some of them, is the grandiose circular staircase at the Palais Royal, Paris, with its straight flight from the entrance, passing between columns and under arches to a landing, and then circling right and left to the top landing ; the whole within a lofty, many windowed, richly decorated vaulted cage. The heavy iron balustrade, sealed to the corniced stone string, is a good specimen of solid work.

In England the Renaissance influence coming rather late has left little of mark on staircases until quite recent times. Some of Inigo Jones's work, however, still remains, as the stairs at Coleshill, planned round an oblong hall, with ascending and descending flights connected with an open landing. On careful study of this specimen it will be seen that the columnar balusters, unlike

those of Caffieri and Lespagnaudel, are designed horizontally, being adjusted to the slope by base and cap, the effect being infinitely better.

A staircase, formerly in Chandos Street, Strand, by Inigo Jones had floriated carved panels, much in the style of Grinling Gibbon when in a restrained mood. The large square newels had sunken panels, with conventional floral and ribbon drops, which look quite dignified. His newels often took the form and proportions of low pedestals, with spreading bases, well formed cornices and flat tops, level with the broad, flat handrails, deeply carved on the under surfaces. The balusters were usually round dwarf pillars, with square tops and bases, and rather pot-bellied shafts, but with regular foot, cup-like flower ornament, projecting rim and spreading cup joined to the square top. The strings were generally a succession of heavy bead mouldings, often with a wreath of leaves.

Of all the staircases that remain to us by Inigo Jones, however, that in Ashburnham House, Westminster, is justly most famous. It stands in that part of the once fine mansion which has happily been pre-

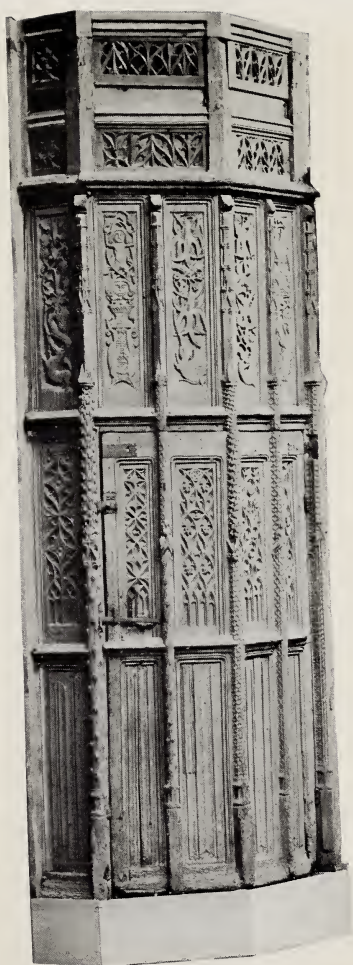
served. Britton and Pugin, in their work on London public buildings, wrote of this specimen: "Of nearly square shape, with four ranges of steps placed at right angles one with the other, and as many landings, it was the passage from the ground to the first floor. Its sides are panelled against the wall, and guarded by a rising balustrade. The whole is crowned by an oval dome, springing from a bold and enriched entablature supported by a series of twelve columns. At the landing are fluted Ionic columns." The dome is elliptical, and the cupola is raised on four groups of three slender columns, light pouring in between the cupola and the gallery. A daring piece of planning, quite in keeping with Grecian practice, is that the dome is smaller than the gallery below, the pillars sloping inwards, thus adding considerably to the apparent height. The landings display a most elaborate system of jointing the boards, the pattern being geometrical, with a fine inlay on nosings and risers. So fine is it in design and careful in finish that it formed the subject of one of Sir John Soane's lectures delivered before the Royal Academy.

A clever way of dealing with a stairway in a great house was carried out at Audley End, Essex, but whether it was due to John Thorpe, the original architect, or to Vanbrugh, the remodeller, it is impossible to say, though it has some of the staginess and mystery loved by the latter. It is placed at one end of the long hall, and is shut off by a screen pierced by three archways and three upper arched openings. The middle arch leads to a vestibule, and facing it is an open gallery landing. Under this is a doorway admitting to right and left flights of broad steps up to the gallery. It is a device that has inspired many builders, and certainly has many advantages when an imposing effect is not aimed at.

Both at Hampton Court and Kensington Palace we have examples of Sir Christopher Wren's manner in designing staircases. At Hampton Court the King's Great Staircase is approached from the colonnaded open court, and is found in a large, oblong hall. The stairs wind up two sides of the hall to an open landing on the third side. The steps are broad and easy, projecting beyond the supporting wall and arches, without a string. The handsome wrought iron balustrade, but

with very plain handrail, is probably by Jean Tijou. In Wren's specification for this work he says: "The great stairs to be made with steps of the Irish stone, such as are at Kensington, but larger and easier, with iron rails of good work, the floor and hearth paces to be paved with marble and the walls to be wainscoated twenty feet high, with fine doorcases." As a matter of fact the wainscoating was replaced by panels painted in monochrome with war trophies, whilst above these and on the ceiling Verrio let loose his wildest fancy, painting a confused medley of allegory and history, with a full, hasty and flamboyant brush, as already fully described in the first volume of this series.

In Kensington Palace there are two staircases by Wren. The King's Grand Staircase is not seen quite as the great architect left it. It has three easy flights, clinging to the walls, two half-landings and a gallery landing over arches. The balustrade of heavy wrought iron work is contemporary, and possibly due to Jean Tijou. Wren had left everything with "plain painting and gilding," but William Kent decorated the walls and ceiling with the elaborate



ROOD LOFT STAIR SCREEN.

scenic paintings as described (and pictured) in "Ceilings and their Decoration." The Queen's Staircase, however, is practically as he left it. It is a very good specimen of the classic style carried out with severe plainness in oak. Panels, steps, stiles and rails are all in this wood. It is of a peculiar grain and veining, and is conjectured to be of Norwegian origin. The panelling is remarkable for the fact that the wood was carefully cut and fitted so that the veining radiates regularly from common centres. This shows that Wren, unlike many builders before and after him, did not intend his wood to be painted.

Wren's work was generally lighter than that of Jones, turnery rather than carving being adopted, and the newel sometimes replaced by a circular cluster of balusters, the handrail being carried round in a wreath or volute. However, he utilised Grinling Gibbon's carvings on occasion. Both Jones and Wren were fond of panelling their staircases, and also of decorating the upper parts and soffits with massive plaster mouldings.

An oak staircase belonging to the year 1670, formerly in Botolph Lane, City, was carved in high relief, the strings with large,

open, acanthus-like leaves. The lower part of the handrail as well as the square newels were carved. An interesting detail was that the panels on the walls were given the same rake and level as the pilasters corresponding to the newels. This is now at the Victoria and Albert Museum.

Another fine example in the same collection, though of a lighter character and later date, was originally in Hatton Garden, Holborn. It is particularly noteworthy for the graceful and practical way in which the initial flight of five steps, with its double balustrade, is handled. The curve and hip in the handrail are characteristic, so are the brackets on the string and the open gallery landing.

Still in the same collection and approximately of the same period is the five short flights of steep stairs, with top landing, formerly in Great St Helen's, City. The newels are decorated with falling sprays of laurel leaves in sunken panels, and the upper ones have pendants. The balusters are of the dwarf pilaster type, given an ugly upward rake with the slope of the stairs.

Jones and Wren were not, we know, able to set the fashion for simplicity of style.

Ware, Kent and others were less severe in taste and by no means happy in efforts of decoration. A curious affectation of simplicity, involving misplaced ornamentation, however, belonged to an earlier period than theirs, the early seventeenth century, as seen in the rustic work on newels, balusters and pilasters as at Holland House, Rawdon House and elsewhere. This pitting of the stone or plaster, and covering the surface with vermiform patterns, in supposed imitation of rough-hewn rock, was in inspiration from the bad French *rocaille* style.

CHAPTER VII

THE TUDOR AND JACOBAN

AMONG other results brought about when the Wars of the Roses came to an end, and the nobility, abandoning their castles, imitated the *novo homo* by taking up their residence in more spacious country mansions, built more and more in a sprawling fashion and rarely more than two storeys high, was the forcing of staircases into greater prominence. Then new problems had to be faced.

Need for stubborn defence was no longer the dominant factor in domestic architecture, either in town or country. On the other hand it was necessary to provide easy and quick access to every part of the mansion, still to a large extent planned in perpendicular divisions. Of course this civilising march of the builder's art was slow at first.

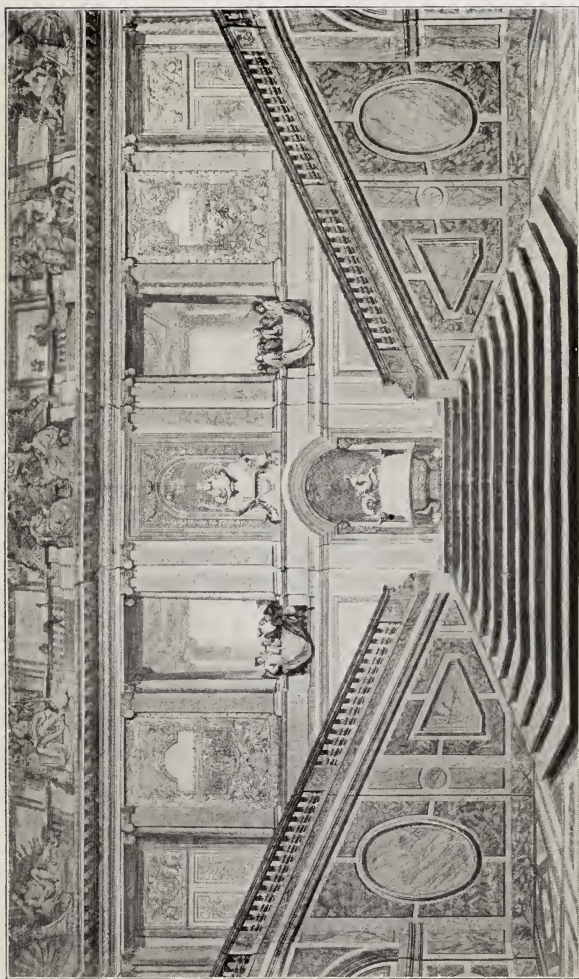
For a long time the castle idea held sufficient sway to determine the placing of staircases in turrets, occasionally external, but more commonly tucked away in the inner angles of courts or wings. Many examples of these solutions still remain. But when the mansion spread in more or less irregular fashion, and a rearrangement of apartments took place, it was felt that the spiral staircase no longer sufficed for all purposes. So the State staircase came into existence, being placed somewhere towards the centre of the building, and leading from the hall to the principal chambers.

It was of this phase that Francis Bacon wrote in his essay on Building. He places the State apartments in the front part of the house and having regard to the importance of these rooms, he says: "The stairs. . . to the upper rooms let them be upon a fair open newel, and finely railed in, with images of wood cast in brass colour, and very fair landing place at the top." On orthodox ideas the domestic quarters were to be at the back, built round a quadrangle, and for the service of these "in all four corners of that court fair staircases cast into turrets on the outside and not within the row of

buildings themselves. But these towers are not to be of the height of the front, but rather proportionable to the lower building."

Happily the Chancellor's directions in this last particular were often disregarded, with great gain to the picturesqueness of the Elizabethan and Jacobean manor houses. A brief consideration of existing instances will soon convince that the staircase turrets rising up boldly from the back, mingling with the clustered chimney-stacks, help much to stamp the characteristics of each building. For the retention of external turrets to accommodate secondary stairs there is much to be said that remains valid to this day, and this aspect of the question will be discussed in due course.

When it was decided that the State staircase must be large, easy to mount, central, with freedom of access, and serve chiefly for communication between ground and first floors, only part of the problem was stated. If built in the front, it was too exposed to be quite comfortable or even sufficiently impressive. If placed in the centre, it took up too much room, thus adding fresh perplexities in the distribution



ESCALIER DES AMBASSADEURS, VERSAILLES.

of apartments. Both these situations were tried and may be found in large and small mansions of that period. On the whole it was seen that placing the staircase at the back of the hall enabled the most to be made of the available space, and the stairs themselves to be utilised to the best advantage.

Apart from the turret spirals, staircases of these periods were almost invariably of wood. Heavy timbering was common, but flat boards were also used, and frequently delicate pieces of turnery and carving introduced. The carpenters were called upon to undertake elaborate joinery, and carried out their work with conspicuous success, as evidenced both by the appearance of the completed structures and their lasting qualities.

A class of staircase particularly worthy of study as showing steps in the evolution from the old order unto the new is that with four newels, and short flights winding round them. These are, of course, elaborations from the solid and hollow central newels of spiral stairs. At Rake House, Witley, we find a square structure composed of four posts filled in with plastering, the whole being carried

118 STAIRCASES AND GARDEN STEPS

three feet above the top landing and there finished with a table top. The stairs are carried round this in short flights. A somewhat similar arrangement was adopted at Borde Hill, near Cuckfield, Sussex. The solid oak staircase, built at Godinton, Kent, in 1627, carries out the same idea. It is not quite square. There are longish and short flights with the interposition of comforting rest landings. Here the newels are rudely designed termini, carved on square posts, with decorated bases, and supporting pedestals well overtopping the handrail on which are heraldic beasts, the Tudor Red Dragon and Stewart Silver Unicorn, holding shields. The three newels on the top, open landing, are in the form of dwarf diminishing pillars, the towering pedestals supporting female figures in the attitude of prayer. The balusters are turned and massive, while the handrail is carved on the sides with wavy foliated scrolls and adorned with a moulded filet, or hand-rest at the top. A peculiarity here is that the string is carried horizontally from the top step of each flight to the lower newel, thus forming a parapet wall with a deeply carved frieze.

Further steps in evolution and elaboration are to be seen at Burton Agnes. We have here an oblong formed by four pairs of square posts, coupled together at each stair and balustrade level by arched ties, the stairs, made up of long, rather narrow but very low steps, and many landings, winding round these continuous newels. It is all of oak, most elaborately and delicately carved, the newels being decorated with a plaited ornament and topped by bell-shaped terminals, the string graved with elegant scrolls and further embellished by pendant scrolled fretwork. The balusters are turned and the handrail deeply undercut with mouldings. It is certainly an exceedingly handsome piece of work, with pleasing restraint in decoration, the beauty being greatly enhanced by the shortness of flights and number of landings, with the consequent frequent change in level of the string and the balustrade.

As a rule restraint in ornamentation was not a strong point with the deft and patient craftsmen of the Tudor and Jacobean periods. Indeed, decoration was decidedly florid. In the early years quaintly outlined, overcarved diminishing dwarf pillars were

used as balusters, sometimes solid, square or rounded, at other times flat. We have seen that in the transition stage the newels were carried from base to top of a staircase. Then we have the alternating system, as at Burton Agnes; then the newels are cut short, but carried above the handrail, as at Godinton. This last form was the most prevalent, and, as at Godinton, usually adorned with quaint terminals. In an age just free from trammels of chivalry, the heraldic element largely prevailed in this special department of ornamentation. But we must leave details to be discussed in a later chapter.

It must be remembered that while in principle the broad, State staircase was for intercommunication between the hall and the chief apartments, smaller "winders" and backstairs being reserved for general service, in practice it often occurred that the main stairway was carried up to the attics, uniting all parts of the house. Bacon's demand for a "fair landing place at the top" corresponded to feeling for freedom of movement as the result of emerging from the restricted area of the castle and fortified house. There was a

tendency to do away with intercommunicating rooms, and to substitute corridors and extensive landings. In these Tudor and Jacobean staircases the landings were not only designed as resting parts, to make ascending easier, but as a means of access to galleries and passages, to vestibules or even direct into rooms. The galleried landings were one of the charms of these mansions and their staircases. Like that delightful oak combination from Morlaix already described, it is frequently difficult to determine where the stairway ends and the landing or gallery commences. For the stairways were often a series of landings, alternately small and large, the latter diverging to right and left, united by a few steps; while the galleries themselves were often stepped. There were constant changes of level disconcerting enough to the disciple of Palladian classicism and to the modern housewife, with a love for much heavy furniture and the dread of frequent removals, but very charming in its note of unexpectedness, which adds so much to the sense of homeliness. We see these attached landings, with their continuous balustrade and occasionally even arcading in all

classes of houses; the country manor house, the town mansions or dwellings of busy merchants, and in the great rambling inns, and those kindred institutions, the colleges. Of some typical examples of these it will be necessary to speak.

At Slyfield, Shalford, a staircase of wood was provided with rusticated newels, the carving representing brickwork or masonry, while the balusters were of cut-out planks with carved surfaces.

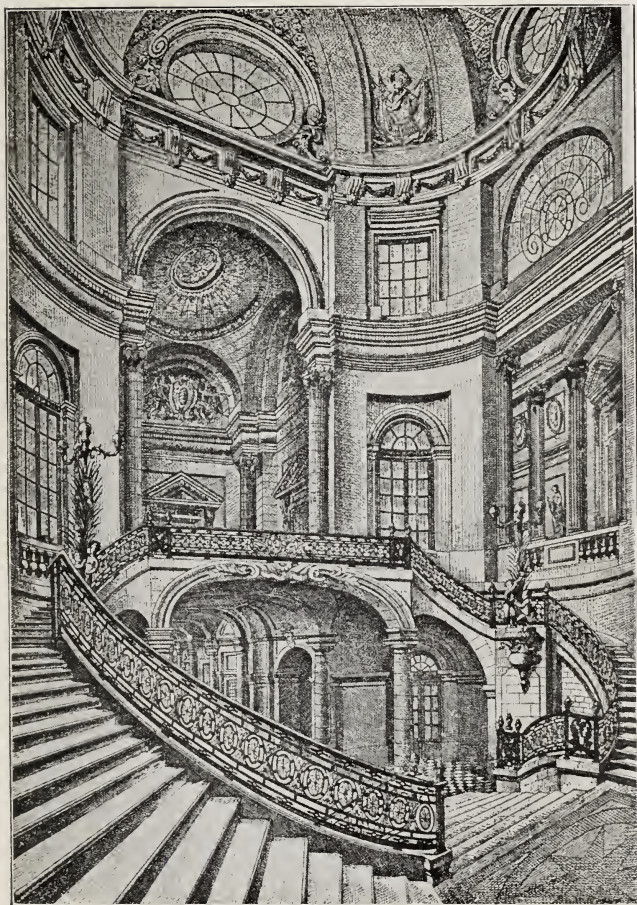
Crewe Hall, begun about 1618 by Sir Randolph Crewe, Chief Justice of the King's Bench, whom James I. dismissed in 1626 for opposing the levy of ship money, until recently contained a very interesting, highly ornate staircase of this open galleried description. It filled the back of the hall, a short flight of wide steps, with low risers leading to a broad landing, with passages leading to right and left, and then another flight to a gallery. The square newels were carried high above the handrail, had peculiar cup-like terminals supporting heraldic beasts holding shields. These newels were strongly carved with geometric strapwork, the balusters were replaced by pierced tracery panels, of a rather formal

but effective pattern, the strings were series of deep moulding of varied forms, and had pendant fret-carved boards in keeping with the panels. The upper newels were also pendant to the level of the first boards, and had carved drop terminals. This has quite the style of the Renaissance grand staircase, though lacking the dignity of attitude. It is suggestive of domestic comfort rather than ceremonial parade.

At Burleigh House the design of the main staircase, with its ascending vaults, is a direct suggestion from the Italian though modified to English needs.

Less formal in design, but more grandiose in execution is the magnificent oak staircase at Hatfield House, constructed soon after 1605. It opens from the upper end of the Great Hall, and leads up by five flights and five landings to King James's Room. It occupies a space 35 feet by 20 feet 9 inches, and has very low risers. The massive square newels rise above the handrail, have reversed pyramidal carved tops, supporting corniced pedestals with draped and nude figures holding various musical instruments, and heraldic lions (the supporters of the Cecils) holding shields.

For balusters there are almost flat dwarf pillars of the well-known grotesque Tudor diminishing variety, knit together at the top by small arches. The handrail is heavily moulded. But every bit of the wood is deeply and boldly carved. On the four sides of the newels are long panels containing Renaissance arabesques. The balusters have the cartouches placed high, with carved faces between these and the capitals ; below they are alternately decorated with panels and flutings *en gaine*, some of the bases have curiously horn-like curves. The arches are embellished with an open leaf. Between each pillar, or baluster, is a low palmated projection. These abortive balusters are characteristic of these two blending periods, appearing in a great diversity of forms. It appears probable that they were intended as a substitute for the handrail for young children. The strings, like the handrail, are a mass of mouldings, and below these are pendant carved scrolls. Scrollwork of the same pattern frames the soffits, which are covered with open strapwork flat mouldings. At the top of the first flight are a pair of heavily carved timber-framed



PALAIS ROYAL, PARIS.

wicket gates, adorned with fleur-de-lis. They are each 3ft. 9 ins. high, and 3ft. 9 ins. wide, and were intended to keep dogs away from the State rooms. Gates such as these on the lower flights for preventing dogs straying up, and on the topmost landing for keeping small children from falling down, were common in large houses.

At Knowle, Kent, the flights are easier even than the very mild slope prevailing at Hatfield. They lead up to a gallery landing. There is rather less ornamentation here than usual, the balusters fairly plain, but the commencing newels have cushion heads on which sit heraldic beasts. The other newels are carried up as at Burton Agnes, only in this instance they support arches.

At Blickling Hall, Norfolk, there is a noble oak staircase conducting from the entrance hall to the first floor. It is thoroughly typical of that blend of domestic comfort and dignified ceremonial of which we gain a notion on reading Bacon's essay. Nearly square on plan, it has a first short flight to a landing, then a right and left flight to another pair of half-way landings, with

continuing flights parallel to the first and at right angles to the others, leading to an open gallery landing. Each step is 6 feet long, with a rise of 6 inches. The newels, highly decorated, are carried far above the handrail, and support knights and other symbolical figures. In the case of the upper newels, they are carried both above the handrail and below the string, being provided with terminal pendants. Balusters, string and other parts are ornamental in outline and covered with freely executed carving.

In this design we have the same pre-occupation as that shown by the stair builder at Crewe Hall: the centralised short flight leading to a reception platform and the open stairway beyond. At Crewe, however, the general treatment is reminiscent of Gothic planning, while at Blickling the inspiration is distinctly that of the Italian Renaissance, derived through France, rather than from Flanders, which usually had the more immediate influence in East Anglia.

Cromwell House, Highgate, which the Protector built for his daughter and son-in-law, General Ireton, possesses a fine Jacobean staircase, which has suffered

little damage. It is of oak, with broad, wide, low steps, a few winders and good landings. The handrail is massive and broad, and the balusters replaced by carved panels of the strapwork pattern. The handrail is carried from newel to newel in stepped fashion, one section below the other, without any attempt at joining up by means of hiping. These newels are carried well above the handrail, are solid, square pillars, carved and having curiously shaped terminals supporting finely carved figures, representing Republican soldiers of that period, from pipe boy to captain. Two of the original figures are supposed to be missing, and tradition says they represented Oliver Cromwell and Ireton.

An oak staircase in Kersal College, near Higher Broughton, Manchester, is adorned with strongly moulded outer string and handrail. The heavy square newels have panels sunk three-eighths of an inch, finished with ogee moulding cornice with flat top. The balusters are square top and bottom, the centre consisting of a dual open spiral.

Chilham Castle, quaintly planned on hexagonal lines, begun in 1615, contains a notable grand staircase. Of this Mr A.

T. Bolton has said: "The arcade of three arches on the first floor is of a pleasing proportion for internal woodwork, having slender Doric columns on very tall pedestals; surmounting each capital is a caryatid figure of Jacobean fantasy, with the usual strapwork ornamentation filling up the spandrils of the arches. The enormous handrail cut out of oak beams no less than ten feet square is, however, moulded in a very crude fashion and rakes awkwardly into the columns and their bases. The balusters, three inches square, are also elementary in their turned action. At first sight it looks as if the staircase had been altered, as the upper flights to the second floor are curiously supported by a tall Doric pillar carried up from one of the lower newels, but this is found elsewhere in early staircases." It is, as a matter of fact, one of examples of how oddly classic features of the Renaissance were sometimes imposed upon native design, instead of being incorporated therein.

At Manchester itself, Cheetham Hospital contains a fine oak staircase, newels and balusters being of the diminishing pedestal type, with pierced carving.

At Charlton House, near Greenwich, Kent, there was a fine and typical oak staircase, of quite noble proportions. The strong square newels were decorated with carved strapwork. The solid handrail with bold side mouldings topped solid balusters, in the form of heavily carved diminishing pedestals with a rake to the slope of the stairway. At the union of the newel and handrail were placed grotesquely carved lions' masks with open mouths, while on the landing the balusters were given slightly developed foliated capitals, of the acanthus genus.

It is difficult to say how far the panelling and other work of these Tudor and Jacobean staircases were painted. In many examples there is distinct evidence of at least a certain amount of paint, and there is every reason to believe that it was contemporary, at least as far as the earlier period is concerned. The Tudor builders had retained much of the Gothic love for vivid colouring, and had no superstitious reverence for wood. With the Jacobean style, however, wood appears often to have been left bare. Ceilings and walls were very generally painted, sometimes in a manner appropriate

to the newel carvings, our ancestors apparently desiring lively companions, if only in effigy, on their staircases. In a description of Hawsted Place, Norfolk, we are told that there was a staircase in the hall, and "on this staircase, against the wall, stood some painted boards, representing domestic servants. . . I know not," adds the reverend author and lord of the Manor, "whether this fancy be as old as the house, the portrait I have (a very pretty well painted female, said to be for a housekeeper) is certainly, from the dress, not more than a century old," that is to say, about 1650. It is a quaint enough conceit, but as we have seen, not peculiar to any age or country. On the other hand, the heraldic beasts and symbolical figures, carved and placed sentinelwise on pedestals, is distinctly characteristic of these periods, and more particularly of the reigns of Elizabeth and James.

CHAPTER VIII

THE GEORGIAN ERA

ONE particular phase of the classical style introduced by Inigo Jones, developed rather floridly by his followers, then brought back to the starting point, is specially worthy of attention here as having given us many dignified and comfortable, besides a few really remarkable staircases. This is what is known in England as the Georgian, and in America as the Colonial style. Nominally it covers the reigns of the four Georges, though more correctly restricted to the period between about 1725 and 1800. It may justly be described as an Anglicised and domesticated form of the Palladian architecture as practised in Italy towards the latter end of the seventeenth century and onwards. At its best it was a simplified rendering of the neo-Latin and neo-Greek, inspired unques-

tionably by the Italian disciples of Palladio, but shorn very considerably of that wealth of statuary, carving and even columns, pilasters and pediments which they loved to mass together in their buildings.

Jones was influenced mainly by classical exemplars, as we have seen from his work at Ashburnham House and elsewhere. Wren, Ware, Kent, Gibbs and their school were more indebted to the Renaissance. Side by side with the last two and following them another school grew up, taking the classic as a model and adapting it to the domestic needs of the country and age. It was a repetition of the Tudor amalgam of Gothic and Renaissance, only without its vigour. Doors, windows and cornices were classic, but broad flat spaces were admitted, both in exteriors and interiors. It had its charms and its dangers; it was, indeed, ultimately to drift to something very lifeless and degraded. It was in opposition to this tendency to reduce everything to the rectangular and smooth that the Adam brothers went back to Rome and Greece both for their main outlines and for their decoration.

In the hands of such men as Paine,



HAMPTON COURT PALACE.

Chambers, and later of Soane, however, this Georgian or domesticated Palladian made homes that had the charm of dignity and comfort. It had a beneficial influence on the planning of what we may call the public parts of a house. The halls or vestibules were generally good; the staircases broad and easy. In the earlier period that love of wood which Jones and Wren had inherited from the Jacobean was handed down. London, especially about the Inns of Court and some untouched eddies off the great stream of life in the Strand and Fleet Street, still preserves a goodly number of Georgian oak and pine staircases; broad, deep steps with low risers, wainscoated, with good square landings at frequent intervals, square newels with mitred tops, heavy handrail and rather plain balusters. More of these are to be seen in the suburbs and country, although as a rule these are of stone or brick and stucco. Quite a characteristic of the early wood Georgian balustrade is the "hipping" of the handrail, which rises at the intermediate newel, either at right angle or in a sweeping curve. This was really due to a further step in the dwarfing of the newel. Although

no longer carried above the handrail, at the curves or intermediate landings, it stood high, the balustrade practically being in two sections, a lower and an upper one, the effective hip bridging what would otherwise prove an interregnum. Carving steadily gave way before turning.

Akin to these altogether delightful staircases of wood were the modest constructions of stone and brick, covered with stucco. These were generally planned on the square, placed parallel to the walls in successive flights, supported on plain soffits or carried on arches with columns or pilasters. The iron balusters and handrail were generally of plain wrought iron and later of badly designed cast iron. In this direction too often the smoothing process of stucco, plain pilasters, plainer iron, degenerated into that dead characterlessness which overwhelmed the early Victorian age. There are many of these coldly effaced efforts that are quite deplorable, for they were not usually relieved by that excellence of outline that we may recognise in the semi-circular staircase at Sheen House, or in the old staircase at the former War Office, Pall Mall, now swept away. It must be confessed that

Sir John Soane's severe simplicity was responsible for an immense amount of bad and slurred work, for his faults were easier to copy than his grace of outline and good taste in restraint of detail.

A good point with the Georgian architects was that they usually lighted their staircases in an admirable manner. We are not referring to top lighting which was not specially characteristic of the period, but of the large windows, generally long and arched. These were almost always placed well above the level of the stairs and deeply recessed. Many of them are most decorative. Accompanying these we frequently find alcoves for the reception of statues or busts. The openings are circular or square with pediments over them. Another form of decoration are the plaques and medallions, bearing busts or figures, and usually surrounded by garlands and ribbons.

Let us now consider a few special examples.

Lord Chesterfield in describing his London house, built in 1750 by Isaac Ware, says: "The staircase particularly will form such a scene as is not in England." It was, as Vertue describes, "all of marble, each

step made of the entire block and 20 feet in length," but had not been designed for Lord Chesterfield. In fact it was bought when the Duke of Chandos's country seat, Canons, was dismantled. Even the wrought ironwork merely had to have the coronet over the C changed from that of a duke to that of an earl. It is approached from the hall through a screen wall, with three arched openings adorned with Corinthian pilasters. An easy short flight leads to a landing, then there are right and left flights, slightly elliptical in form, with winder steps at the base, which reach an open gallery landing, cut off from the reception room vestibule by another stone wall, with three arched openings and pilasters corresponding to those below. The balustrade is of ornamental wrought iron. There is a considerable amount of medium relief plaster work on the panelled ceiling, and the stairs are lighted from side windows, recessed and rather high up.

Where now stands the War Office in Whitehall there was a house with a plain, uninviting exterior, but a miniature palace within. Gower House, or Carrington House, as it was later named, was built by Sir

William Chambers for Lord Gower in 1764-79. The staircase was approached from the spacious hall through three arches with tall, slender columns. To the left was a straight, broad flight of stone steps to a half landing, then a right and left flight, laterally to the walls, with windows, and then the flights continued at right angles to the open gallery landing on the first floor. A wrought iron balustrade had fiddle-shaped scrolls filled with floral work, placed alternately with a couple of plain square bars. The handrail, of moderate size, was moulded, was hipped at the upper landing, and had an elegant curve to a stone balustrade, with dwarf column balusters, which overlooked the staircase. A handsome plaster moulded band ran round the cage at the level of the first floor, and above these, nearly in the angles facing the top landing, were two square alcoves, framed with heavy mouldings and pediments. These sheltered sculptured figures. Between these, and on the side walls, were oblong panels decorated with wreaths and cornices, crowned by mythological beasts. Slight swags and heavy floral pendants completed these embellishments. At the level of the second

floor was a cornice supported by billets, and an open balustraded stone gallery running round three sides of the cage, that over the State apartments being supported by three arches, two handsome columns and two pilasters, with massive capitals and cornices. The ceiling was enriched with plaster mouldings, and had a central lantern. It is a pity that so good an example of Georgian work, one unusually rich for so cold an artist as Chambers, should have disappeared from London.

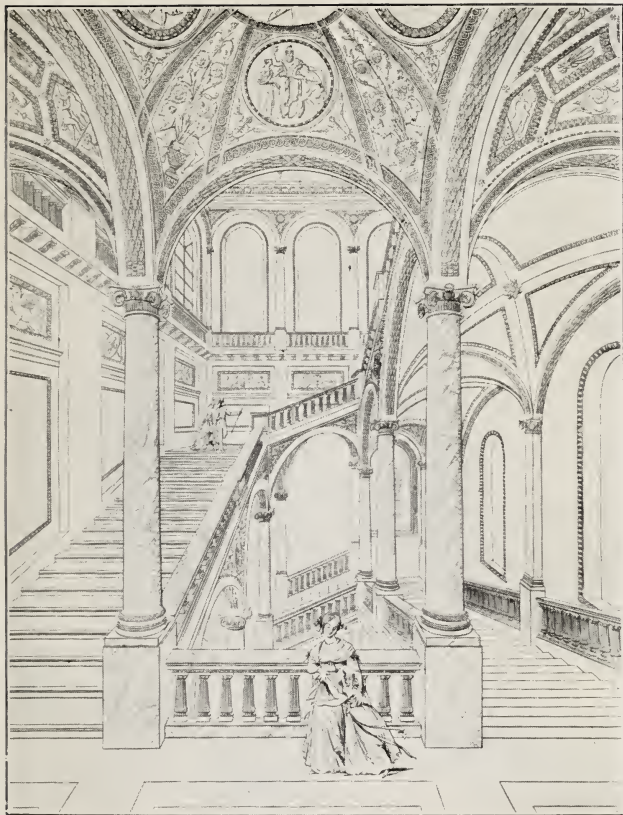
A work of rather less ambition and of a little later date, is still to be seen at Trinity House, Tower Hill. This is a building of the modified Ionic order, erected in 1793-5, from designs by Samuel Wyatt, a member of the remarkable family of Staffordshire architects, which, beginning with Benjamin, timber merchant and builder, included such well-known names as James Wyatt (1748-1813), builder of Fonthill Abbey; Benjamin Dean Wyatt (1775-1850), Sir Jeffrey Wyatville (1766-1840), who did so much at Windsor Castle; Thomas Henry Wyatt (1807-1880), the Gothic revivalist, and Sir Matthew Digby Wyatt (1820-1877). Samuel was a sound, though not an inspired worker,

but he had some originality, as the immediate object of our interest will show. On passing into the large hall one is confronted by a broad, flattened arched doorway, framed by rather heavy double mouldings. Actually in this doorway are two massive Ionic columns supporting an entablature under the arched opening. Beyond this decidedly quaint entrance appears the square staircase vestibule or cage. Facing the doorway is a flight of ten broad steps, spreading outwardly in graceful curves at the base, narrowing as it approaches the landing against the wall. Right and left from this landing are flights leading to the gallery on the first floor. A quite plain balustrade of the typical wrought iron pattern is sealed to the stone steps, harmonising well with the panelled walls. Taken as a whole it is quite effective, and has that stamp of quiet dignity and comfort which are associated with the class.

Mention has already been made of Robert and James Adam, whose father, William Adam, had left some remarkable staircases in his Corinthian Hopetoun House, Linlithgow, and more particularly his bastard Gothic Douglas Castle, Lanark. Many of

the brothers' staircases are still in existence in London, the English counties, and in Scotland, notably in Edinburgh. As a rule they are of stone, though those of brick covered with stucco are also fairly common, and are provided with more or less ornamental iron balustrades, the latter a combination which always suggests to us what the French sarcastically term *du luxe economique*. With the Adam brothers the favourite plan was to place the staircase in a square well, the flights winding round the walls, provided with good square angle landings, and occasionally with open top landings. Walls were adorned with dados and friezes, the latter usually carried out in low relief in their patent stucco composition. Frequently the cages were lighted by lantern roofs. These architects were so far true to the classic ideal that they did not obtrude the staircases, placing them at the back of the hall, or more generally in side vestibules. This, besides facilitating planning, had the decided advantage of conducing to the warmth of their houses by lessening the chance of any up draught.

Of the more ambitious work of these architects we may mention the grand stair-



PALAZZO BRASCHI, ROME.

cases at Sion House and at Luton Park. It was in 1762 that the Duke of Northumberland commissioned the brothers to remould his mansion at Isleworth, which they did in a quite drastic fashion. The innovation included a circular saloon approached by a series of steps from the hall. This saloon was a circle within a circle, the inner opening into the larger by eight arches with columns. Through the middle archway on the left is seen the staircase vestibule, measuring 29 feet by 20 feet 6 in. The staircase is of the dual type, with two straight flights to a midway landing and two return flights to the first floor landing. On each side of the entrance hall are two fine ante-chambers, each with an adjoining square turret containing a square winding staircase. There are four other service staircases in the house.

At Luton Park, Bedfordshire, built for the Marquis of Bute in 1767, the grand staircase is placed in a vestibule out of a corridor well away from the entrance hall. It is cut off from the corridor by a classic screen and a couple of columns. The stairs, formed of broad steps, are composed of easy flights winding round the three walls of the

cage, with angle landings to the first floor. The decoration is of the characteristic nerveless rendering of Greek designs. In London staircases of very much the same pattern were built for Lord Derby in his Grosvenor Square mansion, and for Sir Watkin Williams Wynn in St James's Square. Other good examples are to be seen in that Adam happy hunting ground, the Adelphi; and notably in the house of the Royal Society of Arts, John Street, where there are two, the larger public stairs on the left of the entrance lobby, and the other in a recess at the back of the hall in the Secretary's lodgings.

Henry Holland was among the most fashionable of the late Georgian architects. We have a specimen of his work in the grand staircase in Dover House, one of the remaining landmarks of that period in Whitehall, conspicuous for its semi-circular portico and its round-domed entrance hall. Originally the house, built by James Paine for Sir Matthew Featherstonhaugh, had a plainer exterior. But it passed into the hands of Lord Melbourne who sold it to the Duke of York. It was under Lord Melbourne, in 1787, that

Holland added the staircase, portico and other classical features. Holland's most celebrated achievement was the remodelling of the vanished Carlton House, Pall Mall, for Frederick, Prince of Wales. It contained a rather pretentious, but scarcely beautiful grand staircase. A short straight flight was approached from the hall between two Corinthian columns, supporting a square entablature, then it branched out in circular form right and left to a landing, whence there was another short flight, and again the spreading out into a circle with right and left flights. This was constructed of Portland cement, decorated with coloured stucco mouldings and medallions, and provided with heavy wrought iron balustrade, painted and gilded. A coloured picture of it appeared in Pyne's "Royal Residences," and this clearly shows the inherent weakness of this style from the monumental point of view.

Probably nowhere can the Georgian staircase be studied to better advantage than in Dublin. The political and social history of the Irish capital accounts for the comparatively large number of fine 18th century houses still remaining, though many of them

in a sadly decayed state. It speaks eloquently of a sudden arrest, almost a paralysis, of social life when at its brightest. What remains provides abundant evidence of the artistic tastes of that vanished brilliant society.

At No. 41 St Stephen's Green much seems to have been sacrificed in order to obtain a good staircase. The reception rooms on the first floor are rather cramped, but the stairs and landing are spacious and imposing. It leads from the hall to an open gallery landing, the walls panelled, the heavy handrail, with its substantial balusters on square bases and with square capitals, has a graceful curve. Deep carving adorns the string and the panel below the landing gallery is covered with boldly cut foliated scrolls framing, as it were, a pair of phoenixes placed in the middle. A staircase of a similar character is at No. 20 Lower Dominick Street, used as a parish school. It was built in 1755 by Robert West, a stucco plasterer, who has left evidence of his skill in the high relief stucco decorations on the walls and carved ceiling. Though clearly inspired by the Rococo style, it is light and elegant. The staircase is of wood,

heavily carved, the balustrade carried up without intermediate newels.

At Powerscourt House, William Street, built by Robert Mack in 1771, we have also a sweeping flight from the hall to the first floor gallery landing. This staircase is of carved mahogany. It has no real newel, but a cluster of balusters topped by a circular curve of the handrail. The balusters are formed of two equal sized swelling foliated bulbs, with square bases and tops, rather massive and given an upward rake to correspond with the slope of the stairway. That curious hiping of the handrail marking the period of transition is seen at the curving of the handrail.

But probably the most remarkable of the whole series is at No. 8 Ely Place, built in 1770 for Viscount Loftus of Ely. It is thus described in the transactions of the Georgian Society of Dublin: "This staircase, quite different from any other in Dublin, is in three flights and is lit by a large Venetian window. The steps are of stone, the balustrade decorated with figures of animals emblematic of the Labours of Hercules. At the bottom of the staircase, forming a termination to the balustrade, stands a life-

sized figure of Hercules himself, carved in Portland stone. The Labours are represented by a series of five panels in the following order: the Erymanthian Boar, the Nemean Lion, the Cretan Bull, the Arcadian Stag, and Cerberus. These figures are of wood gilt. Between them are finely designed panels, each with three small medallions of lead beneath the carved mahogany handrail; the balusters are of wrought-iron with ornaments in lead. At the turn of the balustrade on each landing are carved figures of eagles with outstretched wings. This very remarkable staircase was probably designed and made abroad. It closely resembles the staircase in the Musée Moderne at Brussels, an ancient mansion which from 1731 was the residence of the Governors of the Low Countries. The Brussels staircase, which was restored early in the last century by the architect Balat, is adorned with the twelve labours of Hercules, the figures in bronze. The balustrade is otherwise of the same design, or nearly so, as that in Ely Place and is likewise terminated by a statue of Hercules." To complete this picture it may be added that the steps are wide and broad.

The balusters consist of half hoops of metal, enclosing conventionalised cupped vegetation, terminating in substantial vrils, while the leaden medallions, resting on a wrought iron band, are embossed with allegorical designs in keeping with the general scheme. The well of the staircase, at the level of the landing, is decorated with a broad band of plaster-work, carried as a panel round to the base of the gallery, moulded in medium relief with classical scrolls. A deep carved cornice, framed by corded mouldings, is decorated with scrolls, palmettes and vases, and beneath this are festoons of leaves, with drops, medallions and busts, all in medium relief stucco. Three doors on the landing are framed with heavy mouldings, the middle one having a broken pediment and the other two projecting cornices.

CHAPTER IX

THE BALUSTRADE

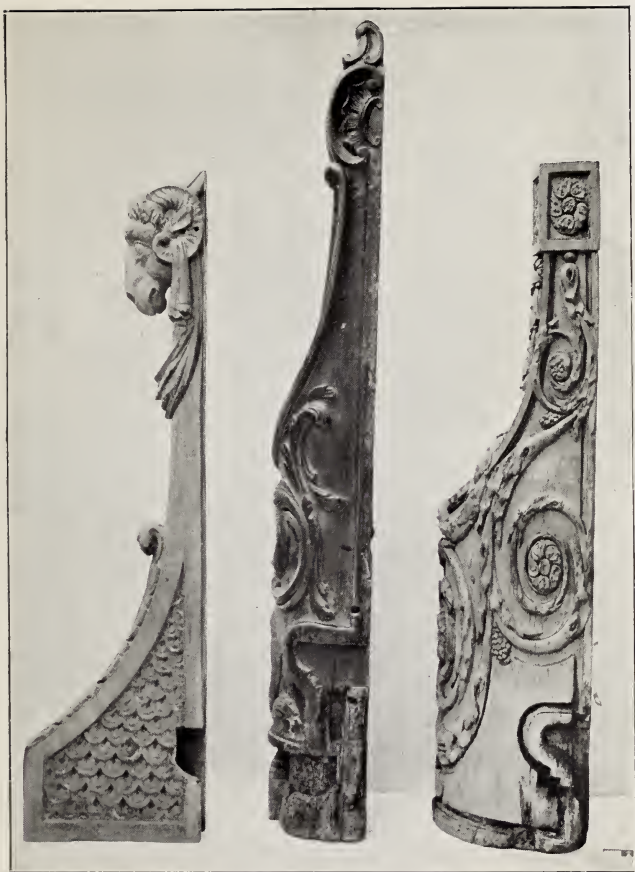
IF, for the moment, we leave aside consideration of monumental work, it will be seen that the impression left on the mind by a staircase depends largely upon the character of the balustrade. Of course the trained eye would first seek to unravel the secrets of the plan and take in the general outline, these being of most importance, and then note the various dimensions of the steps. But to the majority of people the balustrade receives immediate attention by making its direct appeal through the eye, while planning and the nature of the steps being matters to be appreciated chiefly as a result of experience are least likely to be consciously noted when the sensations are pleasurable, or at least when the steps do not call for undue physical exertion.

Usually, it will be found, good planning and artistic expression go hand in hand. Thus it is in connection with primitive staircases that we see the rudest forms of balustrading, and it is in association with decadent designs and constructional methods that we discover the positively ugly banister. Does not this fact carry a warning to certain extremist seekers after simplicity? After all, this deliberate running after simplicity may degenerate into affectation, and that is always bad art, whether it takes the form of vulgar ostentation or of mock humility. However, it is no part of our present task to discuss the ethics of the *art nouveau* or æsthetics of the "Mission" style, so we will pass on to a brief review of the balustrade and all that appertains to it.

We have seen that even in a luxurious house of Pompeii the principal staircase, exposed to the view of all who entered the *atrium*, was provided with the plainest of balustrades: a square cut handrail and mere slats for balusters. An improvement on this we have seen introduced effectively enough in the present day: an indoor cottage staircase, with easy steps, half

landings and galleried corridor at the stairhead, being provided with a plain handrail, nicely moulded for the fingers to grasp, and for balusters alternate broad and thin flat slats. This garden paling style appears to have lasted through the Middle Ages, judging from contemporary pictures and miniatures, in which outside stairways and those leading from great halls to the privy chambers are as often shown palisaded as protected by parapet walls. Wood, however, was by no means the only material employed, as rough wrought iron handrails and bars were fairly common, and were early developed along picturesque lines, as we shall see.

For spiral stairways the balustrade came late. In the spirals of the Romanesque and Gothic periods there was either a heliacal projection on the central newel, more or less gracefully turned for the hand to rest upon, as in the castles of the Comtes de Dunois and at Royal Blois; or we have the projecting stone filet contained in a sunken groove on the circumference of the tower, as at Tattershall and at Greenwich. With the Renaissance it is seen that these handrails are treated as



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decorative assets, of which the artist-craftsman felt it incumbent to make the most, while having due regard to their use and the proportions they should bear to the other parts. The balustrade proper was generally used to protect the exposed portions of the stairway, such as at the landings and the windows.

In Gothic architecture, for stairs other than spirals we find mostly solid parapet walls with copings occasionally stepped, as at the Bargello of Florence, or otherwise made up of exquisitely pierced panels, full of geometrical or floral tracery, as on the library staircase of Rouen Cathedral. It is well to note in passing that the solid parapet for outside stairways is still common in Italy and the Flemish countries, where it is in use to the present day. Of this modified panel form not only did Gothic builders make good use, but so also did their legitimate descendants, the constructors of Tudor and Jacobean houses, while fine examples are also to be seen in Renaissance buildings, though these latter are practically confined to wrought iron work, which is closer akin to wood carving than stone cutting.

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We still possess many examples of these Tudor and Jacobean panels, carved in wood. At Dunster Castle, Somerset, these panels are very full with boldly curved scrolls carved in high relief, and quite naturalistic in form. In a house at Guildford, No. 25 High Street, there are similar panels with splendidly carved scrolls, but somewhat more conventional in treatment than those at Dunster. The newels, solid square posts, carried above the handrail, are plain but terminated by large vases. At Eltham House, Kent, built in 1658, and now used as a clubhouse, there is a splendid Jacobean carved staircase, that has suffered outrage at the hands of innovators, who have removed the old carved vases on newels to replace them with square lanterns placed on tall standards. The space between the handrail and the string is filled with carved scrollwork, of the Vitruvian type, terminating with a rose centre. In the middle panel of the top gallery figures of *amorini* are introduced. It is possible that this form of decoration was introduced into England by Flemish carvers. Certainly the Flemish work of this description shows greater

variety and finer finish than it does with us. For instance in the Brewers' Hall, Antwerp, the staircase balustrade panels are beautifully carved with scrolls quite in the style of Renaissance arabesque, nude boys, cherubs' heads with wings, birds and four-footed animals being introduced in the intricate windings of the freely treated foliage. At Thorpe Hall the scrollwork is more open, less boldly carved. At Cromwell House, Highgate, and in the much later carved wood staircase at Clare Hall, Cambridge, the panels are closely filled with well designed, strongly carved strapwork.

As far as England is concerned serious attention began to be paid to balustrading at the dawn of the Tudor period, when our incomparable joiners and clever carvers had a new opportunity of displaying their skill. Under Henry VIII and Elizabeth, when State staircases had come into general vogue, the art reached a high degree of development, marked by great boldness and originality. The staircases were planned with many landings, and also with many accessory galleries, each with their connecting flights of steps. They were mostly

built of wood, oak being the chief favourite, and were heavily carved, at first with characteristic geometrical flat strapwork, later associated with or supplanted by conventional foliated scrolls, with the gradual introduction of flowers. The newels, even in square planned staircases, were unmistakably derived from the spiral central columns, being carried up as supporting posts to the upper floors, as we see at Burton Agnes, the tall diminishing pillars at Great Wigswell, Sussex, and in so many other instances. When this was found to be no longer structurally useful, the posts were cut short, but still carried high above the handrail, and it became necessary to give these some decorative finish. In early examples we find the tops of the newels carved into quaint forms of pillars and pedestals, often supporting still more odd looking busts. These were succeeded by full figures in the spirit of the Gothic carvers, grotesque human beings, monsters strayed from mediæval "Bestiaries," or more commonly from the Arcanum of heraldry.

With Jacobean work the influence of the Renaissance is more plainly seen. Cheek

by jowl with heraldic supporters we find classic figures, *amorini*, musicians, and so on. Then under the harsher social conditions of the Commonwealth, we find the military spirit arising, with the knightly figures at Blickling Hall, the republican military types in General Ireton's dwelling, Cromwell House, Highgate. In both Tudor and Jacobean work newels at intermediate stages and landings, when not of the continued type, were not only carried above the balustrade, but below the string, and terminated with well carved drops.

Dutch influence on both the outline of newels and their decorative carving is very noticeable in the later Jacobean period, as will be seen on comparing native examples with the half-dozen 18th century Flemish newels reproduced in this volume.

Already Inigo Jones had brought in considerable modifications, still further shortening the newel, giving the commencing post a square, monumental form, with panelled sides and corniced tops. The period of transition is also marked by the substitution of vases, either of the closed urn type or of the open cup pattern filled with flowers and fruit. These vases gradually

diminished in size, and are eventually replaced by knobs and balls. Under Wren's influence the newel becomes more monumentally architectural, embellished not only with carved panels, but freely treated festoons of flowers and fruit, sometimes developing into the over-bundance of Grinling Gibbon. An early specimen of this form of treatment was to be seen in Chancery Lane until the middle of last century, when part of old Southampton House was still standing. There was a very steep staircase (reproduced in Archer's "Vestiges of Old London," 1851). The starting post was in the form of a triangular pedestal, with well marked cornice and coping, the sides having carved sunk panels. By way of balustrade there was a broad band of pierced running scroll.

An awkward legacy of the old continued pillar newel was the designing of balustrading in separate panels for each flight and landing, and joining these up at the newels at different levels. To overcome an arrangement which was frequently ugly and often inconvenient, the practice of "hipping" was introduced, the handrail from the lower level being carried up in a curve, as we see



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in the charming 18th century example from Hatton Garden, while another interesting example is to be seen in a City house, possibly by Wren, numbered 1 Laurence Pountney Hill. This hiping was specially characteristic of early Georgian work.

A curious treatment that came in with Inigo Jones, but was carried to extremes by Ware, Kent, and Gibbs, was the reinforcing of the commencing newel with some form of buttress, usually a reversed console, sometimes formed of plain volutes, at other times of finely foliated scrolls.

In the majority of instances the spaces between every two newels were filled with balusters, ranging from the uncouth paling to the most elaborate of carved or turned bars and pillars. During the Tudor period the early balusters were either carved bars or more commonly dwarf pillars. They were both flat and square in section, often elaborately decorated with geometrical strap-work, scrolls, floral festoons, and masks. With the solid work of the Elizabethan period the pillars are usually surface decorated, but also sometimes pierced. A favourite form in early Jacobean stair-railing was to cut the balusters out of planks, these

being left flat and solid, though decorated with surface carvings; at other times they were freely pierced, so that they became almost skeletonised. This frequently merges into the pierced plank panelling, placed horizontally or vertically. It was about this time, too, that short abortive balusters or projections were introduced between the rods or pillars, probably for decorative purposes merely, though Richardson suggested that they should be reintroduced for the benefit of small children climbing upstairs.

Very fine specimens of turned balusters are seen as early as Elizabeth's reign. Forms met with are the double oveline, two opposed long bulbs with a central ring or ball, three bulbs separated by rings, or the slender pillar with ornamental bases and tops. Later we have the spiral, or twisted form, elaborated sometimes into two or three spirals, pierced, each being independent, though springing from a common base and cap. The gauge of the thread varies considerably. There was a constant mixing of different patterns; for instance, we find close spiral, open spiral and fluted balusters placed alternately, which has quite a pleasing effect.

Under the influence of the late Renaissance we find balusters with turned bodies decorated with carved ends ; thus a rounded or a scrolled shaft may have leaf cup bases and caps. For instance, in a house of the late Renaissance style in the Close at Salisbury, the newels have round plain bases, fluted bulbous shafts, foliated at the base and elaborately carved with small leaves at the top. The balusters have foliated bulbs out of which spring spiral shafts with carved capitals, the abacus being round and plain. The handrail is nicely rounded on the top, and the sides carved with strongly designed leaves.

There may be one baluster to each step, or two or three to each ; and these may be fastened to the step itself or to a bar corresponding to the handrail. A late innovation is to bring the nosing on the side of the step over the string, and to cut through this nosing a notch in which the baluster, furnished with a terminal drop, is fitted. This method is probably an adaptation from one way of fastening iron rails to stone steps, the rails being brought outside the string and fastened thereto by means of a ringed bar projecting from the string. But

the system is a bad one for domestic work. It is not pretty, makes cleaning difficult, while the balusters are more apt to be knocked out of their position.

Stone staircases are usually provided with stone or marble balustrades, although the combination of stone steps with wood balustrades is, of course, met with, while the combination of marble steps and metal balustrading is still more common. Both stone and marble balusters are generally in the form of dwarf pillars, which may be given very varied forms, plain cut or with more or less elaborate surface carving.

A point which may be discussed here, although it applies equally to carved wood, is the advisability of giving the balusters an upward rake corresponding to the slope of the stairs. With some of the Elizabethan builders, but more especially with the Jacobians and the followers of the later Renaissance developments, it was a favourite practice to carve the dwarf pillars, and even give the decorations on bar balusters an upward rake, with the idea of repeating the sloping lines. While in theory this sounds very well, in practice it is rarely successful. Certainly the Versailles example

is not encouraging, and we agree with Sir William Chambers when he says that the balusters should not be made to follow the plane of inclination, but ought to be kept vertical, the abacus and plinth, or base and cap, being made in shape of wedges to adjust matters.

Tudor and Jacobean handrails are remarkable for their substantial proportions, being deep and broad. They are sometimes triangular in form on their upper side, having a rounded central ridge, the real *main courante*, and projecting ledges on either side. As a rule, however, they are nearly flat, with a slight central upward roll. The sides are often embellished with flat or high relief carvings. With the introduction of neo-classical style the sides of the handrails were diminished and made either circular or semi-circular, frequently grooved with longitudinal mouldings.

At Charlton House, near Greenwich, we have a typical 16th century wood staircase. The newels are massive, square cut and decorated with high relief strapwork. A solid handrail with bold mouldings is supported by carved balusters in the form of dwarf diminishing pillars, having an upward

rake. At the union of the handrail and the newels we find grotesquely carved lions' masks with open mouths, corresponding to the grotesques we have seen in the Morlaix specimen. It is curious to see at Charlton House that the balusters on the landings take on a more decorative form, having slightly developed acanthus capitals.

In the Victoria and Albert Museum there is a portion of a pinewood balustrade, with turned balusters, coming from Castelnau House, Mortlake, built about 1680. It is very chaste. The newel is a small Corinthian fluted column, the handrail well turned, but plain, and there are three balusters to each step, the spirals on the shafts being of diminishing lengths, as they start horizontally with the steps but rise to the plane of the slope. This was a favourite compromise between the severely vertical treatment and the unsatisfactory rake. In this case each step is supported by a neat scrolled bracket. The walls are panelled in pine, a fluted pilaster being placed on a level with the newel.

The string is found susceptible of considerable modifications. Usually it is a straight, broad band following the plane

of the stairs, and placed immediately below them. These bands are frequently highly ornamented with carvings, sometimes they are carried below the soffits, the hanging portion usually being carved with pierced fretwork. At other times they are carried above the steps, forming a kind of parapet, often carrying the balusters, and sometimes treated in the quaint way we see at Godington. When the steps are apparent above the string they are generally finished with nosings, and a very ornamental appearance may be given to them by supporting them with consoles, either mere volutes or delicately carved foliated scrolls. Specimens of this treatment are seen in the illustration of the Hatton Garden staircase.

Stone carved panels, much resembling those already described when dealing with woodwork, are also common. As we have mentioned, Gothic buildings contain staircases with panels both of carved wood and cut stone, these panels being filled with tracery, mostly of a geometric character, though with some foliations. Renaissance workers also used carved stone panels, but this is rare in England.

Ironwork balustrades seemed quite natur-

ally to expand into panels. The mediæval work was quite plain, a flat-topped or rounded handrail, and straight bars rivetted or welded to the rail and sealed in holes drilled in the steps. In some instances every third or fourth square sectioned baluster is brought through the handrail and terminated in a spike. Whether this was to facilitate climbing steep stairs or to frustrate the downward sliding propensities of youth, it is hard to say. It was not until the reign of Louis XIV that the French builders covered the iron band with a turned mahogany handrail. But long before that, in Italy during the early part of the 16th century, the iron balustrade was made quite decorative with hammer-work. At first it was a mere addition to the upright bars, then they were enclosed in twisted bands, so that lyre and vase-shaped slender panels were formed, gradually filling up with scrolls. By beating out parts of the iron, or clothing the bars with cut-out sheet metal, quite elaborate scroll work was formed.

A charming example of the 17th century at Arrezo is remarkable for the beauty of the open scrolls, blending with uprooted trees.



BALUSTRADE, FROM GREAT ST. HELENS, E.C. (SEVENTEENTH CENTURY).

Heraldry was introduced quite lavishly usually with complete success. Occasionally we find repoussé shields, but as a rule the shield and emblems are skeletonised, reproduced in hammered work, with perhaps a little sheet metal clothing, and often there is a delightful touch of imaginative treatment, at once thoroughly in keeping with the nature of the material and the general design. For instance, we see a Cardinal's hat represented by a campanulla, its accompanying tendrils quaintly twisted into the form of a cordelier, with the prescribed number of knots and tassels for a Prince of the Church. Beneath this is a shield in outline, filled in with a fesse formed by a broad flat band, placed between six barrulets (represented by thin bars), while in chief are three stars, and in base a fleur-de-lis in beaten iron strung on thin unobtrusive bands. The long panels are supported on curved and shaped rests, framed above by a bar with a series of circles, above which is the convex handrail.

English ironwork of the 16th century is mostly of the plain strap and bar type, with a few rosettes. German work of the 17th century is decidedly florid, with good

scrolls and flowers ; but in straightforward design, without much resort to clothing, practically the only sheet metal being utilised in the formation of the petals.

French ironworkers developed this form of composition along very florid lines, Daniel Marot's designs for staircase panels being quite celebrated. Marot was over in England in the train of William of Orange, but it is not known whether we have any ironwork designed by him. The florid style of France was introduced in England by Jean Tijou, another of William's importations, who has left much work at Hampton Court and elsewhere. Our two illustrations show very typical designs, taken from his collection of engravings. The long landing panel, with short flight panel, is practically identical with the ironwork balustrade on the second stairs at Chatsworth, the oval under the coronet being filled in with a monogram. The long, more elaborate flight panel given has not been identified, and if ever actually carried out was probably greatly modified. It departs from the true style of ironwork design, being more suggestive of a mixture of metals, say the addition of ornaments in bronze and

copper. Such a mixture, as a matter of fact, did come later, being introduced occasionally with lead and cast iron, as we see in the Georgian balustrade at Ely Place House, Dublin. Another curiosity to be seen in a house on Merchants Quay, Dublin, is a staircase with balusters composed of flat perpendicular bands in perforated brass, the outer lines filled in with ovals enclosing trefoils.

Beaten and embossed sheets used so lavishly for clothing welded bars, scrolls and flattened centres by Marot, Tijou and other designers of their school were treated in quite an extraordinary way by late Renaissance men in Italy. Thin sheets of iron were cut out in most elaborate patterns and then embossed, from rounded models, so that two halves were produced, which were then welded or merely rivetted together. There is a remarkable 17th century Venetian specimen of this work at the Victoria and Albert Museum. It has a plain iron handrail, the panel at the base being framed by floral scrolls, while the balusters are represented by well modelled cupids dancing up the steps. The scroll-work and figures are *repoussé* in two halves,

which are roughly rivetted together. The only merit of this system is the economy of metal and the lightness of the balustrade, which is a contrast to the later wrought and cast iron and bronze balustrades, with embellishments in copper, of the same character as are seen at the Palais Royal, and at Chantilly. This last belongs to the 19th century, having been designed by Honoré Daumier, the famous caricaturist, and cast by Daumet. The handrail is massive, decorated at its side with the Greek voluted wave band, beneath which are continuous foliated scrolls, modelled in high relief, while the string is a hollow band with beaded ornamentation, terminating in volutes. In place of the starting newel there is a massive upright scroll, curving out boldly at the foot, apronwise, the handrail ending in a handsome ram's head. This treatment is very suggestive of the stonework balustrade on the terrace overlooking the lake of Como at the villa Balbianella, which is filled with large monograms bearing cartouches supported by amorini seated on scrolls.

During the 19th century, cast iron balustrades were often deplorably poor in

design, whether formed of ornamented bars or flat panels. But of late there has been a distinct revival in hammered ironwork, usually straightforward strapwork, occasionally with the introduction of moderate foliation and a little copper. Very excellent results may thus be obtained for ordinary purposes.

Freer treatment has also been adopted by some artists, notably in France. A good instance of this art adapted to material and use was shown in a remarkable staircase balustrade exhibited by Felix Gilon in Paris two years ago. It represented the marine pine carried out in hammered iron. The long flight panels were framed in two horizontal bands at the top and one below, and in between were the straggly branches of the pine, with its bunches of long needles and small round cones, some closed, others partly open. It was an excellent piece of design, with its sweeping lines, suggestive of wildness, but judiciously restrained, having no lateral projections. For actual use, the top iron bar ought to be encased in moulded pine wood handrail.

CHAPTER X

THE NINETEENTH CENTURY

THAT tendency towards the commonplace so noticeable in much of the later Georgian work was accentuated tenfold in England with the advent of the 19th century, growing worse as the years rolled on until well past the mid-Victorian era. Taking the first sixty or seventy years of the century there is very little to commend, and, in domestic architecture, a tremendous amount to be deplored. All the bold originality of the Tudor, often rudely enough carried out, all the sterling solidity combined with elegance of outline and detail of the Jacobean staircase, which had lent character to even humble houses of the bygone days, was swept away. An alien classicism, from which it had been found necessary or expedient to eliminate so

much, at last became so smooth and characterless that it stood forth in stark utilitarianism. So we had the plain steps, steep, straight flights, plain balusters and stereotyped round polished handrail; the whole combination a thing as devoid of the grace of design as it was of the life of true craftsmanship. Matters were not mended when one stepped from the commonplace brick box type of house to the "overdressed" villa, where the obvious lack of thought was not at all concealed by the ornamentation, too clearly applied haphazard to the surface, not growing out of the structure itself.

Gothic revivalists scarcely added to the immediate harmony, though later they quickened art conscience into activity, which was to end in fruitful labour. But for the moment a great deal of their work was stamped with unreality, and so constantly betrayed the inappropriateness of ornamentation. Work at Windsor Castle, at the happily demolished Fonthill Abbey, other ambitious country seats, and the Gothic villas that still stand on the outskirts of many of our towns bear sufficient witness to this.

At Windsor Castle Sir James Thornhill had painted for Queen Anne her State staircase, which was large and imposing, if not beautiful. He had indulged in a profusion of allegories in the taste of the day, using umber heightened with gold. These mock bronzes and the stairs were removed in 1800 by Wyatt, soon to be metamorphosed into Sir Jeffery Wyatville. He adopted the Gothic, and as will be seen from the illustration, the stairs were approached from under a low, flat vaulted ceiling, supported by clustered pillars, with capitals branching out into tracery mouldings. Of this staircase Pyne says: "This grand approach to the State apartments is situated in the north angle of the upper ward, and included a porch leading to a vestibule divided by a centre and two sides, vaulted in a style of rich Gothic. From this porch to the commencement of the stairs is forty-five feet, the centre division is fourteen, and the sides each seven feet wide; their extent one hundred and eight feet; in these are niches with Gothic canopies of tabernacle work. The stairs are divided into two flights, the first nineteen, the second of

fifteen steps. There is a gallery in front, and one on each side; the front gallery is twenty-eight feet in height, the side galleries each forty-seven feet. The balustrades to the staircase and galleries are elegantly designed, and executed in iron bronzed, with bases and capitals of burnished steel. The staircase is enclosed within lofty walls, and terminates in a lantern, nearly one hundred feet from the base, richly ornamented with Gothic tracery. All the ornaments of this elegant staircase were designed by Bernasconi. But it must be acknowledged the effect is not good, for the Mediævalism of the architecture carries as little conviction as does the badly patched name of the architect.

Nor can it be said that we fared much better with our efforts at classic architecture. Probably the most notable and certainly the best of our public staircases of those early decades, is Sir Robert Smirke's principal staircase at the British Museum. Smirke was almost obsessed with a fanaticism for the Doric and Ionic, which he always managed to make terribly solemn, not to say sombre. The British Museum is an honest and dignified piece of work, but

it is undoubtedly heavy. And that is the chief characteristic of his staircase. Passing under the heavy Ionic portico with its double rows of immense fluted columns, the large hall is entered. Radiating from the centre are the entrance to the domed rotunda of the Reading Room, facing the portico; to the right the long gallery leading to the King's Library; to the left the Grand Staircase. It is approached between two huge columns and is composed of very long steps, solid blocks of stone without nosings, of fair breadth of tread and low rising, carried up between massive walls. There is no lightening of the effects by the use of columns or pilasters when once the well is entered; the soffits of the lateral flights on each side are decorated with panels formed of heavy but plain mouldings; while round the staircase well there is a sculptured thick band of bay leaves midway up, and a plain enough cornice with a by no means handsome top light above. The walls are now covered with stone sculptures of Hindu and Buddhistic origin. Mounting the first straight flight we find four steps, and then a narrow landing, fourteen more steps and

a further narrow landing, another fourteen and then a broad, long landing placed against the end wall. Then there are right and left flights carried straight up between the well walls and a heavy balustrade, composed of flat pierced oblongs, with flat moulded edges, topped by a broad, slightly convex coping, a brass handrail having been added on the inner face of this. Each flight has 28 steps divided by a narrow landing. The top landing is open and has a screen wall with arched openings adorned with Ionic columns. It will be seen that while this staircase is imposing in its massiveness and breadth, it possesses neither the charm of elegance nor originality. There are other equally fine staircases in the Museum, mostly carried up as straight flights, winding round to sides of the well, but also quite uninspiring.

In private houses there was occasionally something a little better. At Bridgwater House, St James's Park, a staircase was built in 1849 reminding one of the Thorpe-Vanbrugh design at Audley End. A three arched screen divides the hall from the staircase vestibule, and the straight flight

conducts to an arcaded gallery with balustrade, the arcades formed of coupled columns. Benjamin Wyatt who built Stafford House lined the magnificent hall with imitation *giallo antico* relieved by Corinthian columns of white marble. Thence there was a broad flight of marble steps to a landing, with right and left reversed flights protected by a handsome gilded balustrade. This was splendidly conceived, both as regards breadth, flowing lines and the harmonious variety of rich materials used. Lord Ronald Leveson-Gower has waxed enthusiastic over the beauty of the scene when the hall, staircase and galleries were lighted up on gala night, and thronged with fair women in pretty coloured garments and men in gorgeous uniforms, a picture which Benjamin Disraeli described in one of his novels with all the magic of his polychromatic phrasing.

Both as regards grandeur and imaginative treatment the State staircase at Londonderry House, Park Lane, probably surpasses anything of its kind in London. The entrance hall leads to a kind of *atrium*, surrounded by galleries supported on slender fluted Corinthian columns. A

short flight of broad steps leads to a half-way landing under a gallery, and thence two flights run at right angles, right and left, to a landing on the first floor, passing under a screen wall supported by two groups of coupled columns and two pilasters, into the gallery, which is carried right round, with similar openings on each of the other three sides. The balustrade is a handsome one of wrought iron, composed of two forms of upright panels, one lyre-shaped and both filled with delicate work, with a single ornamental bar baluster between them, and topped by a fluted handrail. The upper part of the wall, at the level of the openings, is decorated with a broad, sculptured band, with cornice, and above this over each opening is a blind arch traced in handsome mouldings. Eight tall pilasters with foliated capitals spring from panels at the first floor level and reach up to a projecting moulded cornice, above which is a shell cornice just below the covings, which are adorned with small square sunken panels containing rosettes. The middle of the ceiling is glazed. There is an almost startling contrast between this pure piece of Palladian work and the late French

Renaissance style of the state rooms, but such vagaries were too characteristic of that period, and indeed specially of the architects, Samuel and Benjamin Wyatt, who completed this about the middle of the century.

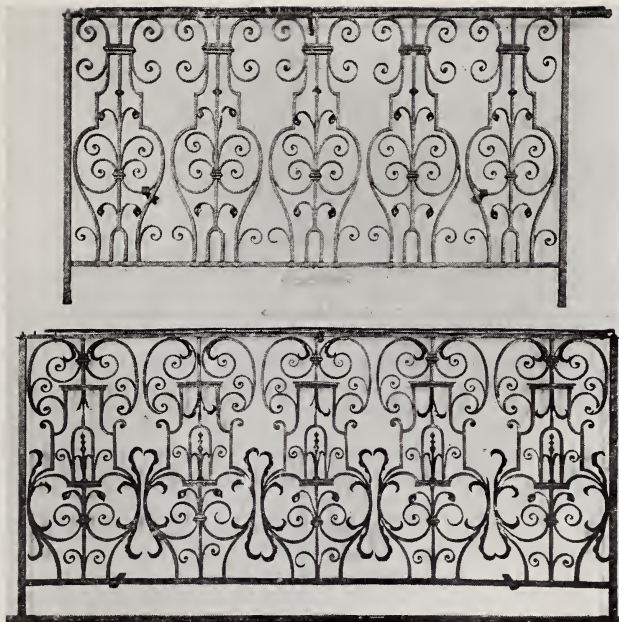
Another mansion in Park Lane, Dorchester House, built for Mr R. S. Holford, by Lewis Vulliamy between the years 1850-53, is in more unmixed Italian style, and contains a remarkable staircase. It occupies the centre of the house, in a court lighted from above, surrounded by an open arcaded gallery with balustrade, supported by coupled columns. The arches have coupled columns, placed abreast, not one behind the other as at Londonderry House, while at the angles are splendid clustered columns. These support projecting cornices, above spring the arches. The galleries are vaulted, and adorned on the external walls with pilasters. Above the arcade is a broad band, the ornaments being alternately palmettes and roses, over this is a dentiled moulding and then a projecting cornice. On this part rest arched windows, with coupled flat pilasters and decorative panels between. A double cornice connects the

whole with the deep framed and painted covings. The staircase itself is of marble, and the steps having broad treads, moderate nosings and very low risers. A flight runs parallel to one side of the gallery to the angle of the wall, where there is a landing, and then another flight parallel to the other side to the first floor, with an intermediate landing supported on small open arches. The balustrade is of marble, with a broad flat handrail and dwarf pillars with swelling bases. Square pillars with shaped bases and corniced caps brake up the balustrade at the landings, the handrail joining below the cornice where there is a scrolled leaf. The string is marked out by plain raised mouldings, and beneath this a band of delicate carving.

An agreeable feature introduced in stair building for mansions and houses of medium size was the converting of the intermediate landing into a kind of ante-chamber, with alcoves, seats and stands for plants. Occasionally these were extended by adjoining balconies, either open with portico, or enclosed with columns and glazing, and adorned with plants. In order to emphasise this arrangement, arches were sometimes provided.

Another pleasing innovation was the admission of broken surfaces on the staircase walls and the bolder use of colour. This came well after the sixties, as the result of the art awakening caused by the activities of such men as Ruskin, the Rossettis, William Morris, Walter Crane and others.

How far this use of colour was sometimes carried may be instanced by a description of a hall and staircase decorative scheme carried out by Mr Andrew Wells in a Glasgow house. The entrance hall, divided into three sections by Corinthian columns, had the ceiling and walls covered with hand-painted panels. The ground of the ceiling was light blue and gold, with decorations in darker shades of blue. Thin lines of Persian red, orange and gold framed the panels, while the cornice was picked out in pale blue and fawn colour, with smaller enrichments in Persian red and gold. A pale salmon was chosen for the mid-walls, on which were painted panels of figures representing the Seasons on a background of gold diapered with raw sienna. To harmonise the whole, the panels were framed with broad bands of black, with an inner line of vermilion and an outer line of gold.



ENGLISH WROUGHT IRON STAIR PANELS.

Intermediate spaces were covered with arabesques carried out in darker shades. A dado of dark brown contrasted with the elaborate cupola painted with figures on gold panels and ornaments in Persian blue. The cornice of the stairway was broad, decorated with groups of boys and Renaissance columns, floral festoons uniting them. Under the frieze was a broad band of crimson painted with the Greek key design in chocolate and black. For the main walls a scheme of graduated colorations was adopted, variations being introduced at each landing and every storey, beginning with the soft red in the hall and ending with warm primrose at the top, each division being marked by bands of hand-painted ornaments in harmonising tints. The woodwork was painted a dark Indian red with Prussian blue ornaments, and was highly polished.

In the main, the scheme, though perhaps rather bold, coincided with the rules advocated by Mr John Dibblee Crace. His advice was to introduce a distinct contrast in the colouring between lower and upper floors, using cornice and decorative bands as bridging links. He claimed that if this

were done, the darker shades being used for lower storeys and dados, not only was an air of stability given, but the treadmill effect of continuous flights was overcome. For this reason, too, he advocates breadth-giving horizontal lines and the decoration of soffits with moulded panels or stencilled ornaments.

On the Continent of Europe staircase design never fell to quite such a low ebb as it did in Great Britain, partly owing to the greater interest taken in architecture, and partly to the custom of grouping a number of dwellings in large houses. Thus attention to the principal staircases was natural in countries where even the magnificent private hotels, the family mansions are generally planned on the grouping system, containing main suites and wings or other suites for bachelors and younger *ménages*. The tradition of the State stairway is therefore kept alive in every street and in every town. Access to these staircases is generally gained through an open or closed court or from under a *porte cochère*. In private mansions the combination of three flights, one and two, or two and one, to the first floor, are the

rule, but in larger groupings successive flights are generally carried round the walls of a square, oblong, semi-circular or ovoid well. They are generally of easy gradient, with spacious landings. The fault with most of these until recent years, and even now, is the habit of using top or borrowed lights. A cupola rarely gives adequate light in the staircase well of a tall house, and windows looking out into inner courts are quite as unsatisfactory. A quaint and obnoxious feature of the older dwellings is that domestic offices often draw their only light and ventilation from the staircase.

In Italy the open staircase, those in towns generally being placed in courtyards, are still the fashion. This brings one to the fact that outside staircases were, and are still, much favoured in country districts. It is a common thing in some parts of Italy and France to see an outside staircase leading to the first floor, the ground floor being used as store-rooms and offices. Or again, we may find the ground floor forming one residence, and the upper floor approached by an open staircase in the old Roman style, used as another. From this custom many a laughable anecdote

dote has sprung, relating how an architect had built his house, forgetting all about facilities for vertical access from floor to floor, and so being compelled to add an outside stairway. This mischance is popularly supposed to have befallen Balzac, who, as the rather doubtfully authenticated story goes, so worried his architect during the fashioning of Les Jardies that the staircase was utterly forgotten. It is far more probable that the then less orthodox method of access had its attractions for the fantastic minded novelist.

Of public staircases erected in Paris during the past century one at least deserves extended notice, and that is Charles Garnier's masterpiece at the Grand Opera, built between 1861 and 1875. It is certainly a thing of marvellous boldness and beauty. A dream, truly. Not like those nightmares of the poor fevered brains of a Piranesi or a De Quincey, but a joyous thought of a Boccaccio translated into an intricate structure of gorgeously coloured stones and metals. For all the world it is as though groups of Graces, awakened by Comedy and the strains of Apollo's lyre, had with the *amorini* seduced the

gleaming porphyries, the brilliant marbles all encircled by golden flowers, into joining them in a mazy aerial dance, in the midst of which they had been caught and immobilised in a magic trance, so daring is the conception of the flying stairways, the sweeping lines of the balustrades, the balconies now hiding behind the pillared arcades, now advancing in bold corbelling. Garnier himself has written of this part of his work that he regarded it as the appropriate scene for masked fairy revels. Thus to its creator it was "a gilded cage, a wide open basket, an immense casket, in which hover, bloom and glitter the fairy world of butterflies, flowers and precious stones."

And what, it may be asked, is there to justify all this imagery? Well, on entering the sub-ground floor the low vaulted vestibule is a mass of floral arabesques, carried out in high relief stucco, heavily gilded, and richly coloured. Facing the entrance is an alcove sheltering a graceful figure, with a fountain before it. On either side are two huge mirrors, reflecting in endless vistas the massive garlanded and festooned columns which guard the right and left

flights, sweeping in gentle curves upwards through a tunnel of splendid arabesques. These stairs debouch on the grand vestibule, on either side of the main stairway, the steps of white Serravezza marble mounting in a gentle slope between a balustrade of greeny white onyx, supported by its 228 balusters of red marble on square bases of green Swedish marble. On pedestals behind this balustrade are groups of female figures in marble with draperies in bronze, and small nude boys holding aloft torches of many branched lights. At the level of the vestibule of the façade a wide landing is reached, and facing the stairway is a monumental doorway in precious marbles flanked by two colossal polychromatic caryatic figures, supporting a heavy pediment, on which are two *amorini* upholding a shield of the arms of Paris. Right and left are two flights, carried at right angles on flying bridges over the lower flights. The square cage of this stairway is agleam with marbles, gilding, vivid mosaics, bronze and gold torches and the warm coloured paintings of the soffit. On the first floor level are thirty great monolithic marble columns, alternately



HALL AND STAIRCASE, FORMERLY IN HATTON GARDEN, W.C.

violet and peach hued, standing on white bases and crowned by snowy capitals. Towards the outer lobby they are ranged in groups of four, elsewhere they are coupled. Each storey is arcaded, with twelve openings. Advancing out from these arcades, hanging over the stairways and lobby, are corbelled balconies with translucent balustrades of fluorspar. On the second storey the balconies, with balustrades of marble, are seen just behind the columns, while a little below the coving of the soffit, with their gaily painted allegorical canvases, are another row of balconies with stone balustrades. Such is an all too succinct account of a work which has been much criticised, but remains one of the attractions of a city of palaces.

Without going into the intricacies of planning and construction, it may be added that Garnier provided his opera house with five service staircases. Two of these are semi-circular. Two others are practically in duplicate, that is to say the alternate right and left semi-spiral flights meet on common landings, and then diverge left and right, thus forming a kind of criss-

cross trellis. They are constructed of iron girders imbedded in mortar, and have wooden treads and zinc risers. Garnier made a special study of the handling of crowds and dramatic companies in theatres, and the construction of staircases for this purpose. His remarks contained in his monograph on theatre construction are well worth perusal.

It would serve no useful purpose to describe or give a list of the other grand staircases in France and other Continental countries, the general trend as regards design and decoration having been made sufficiently clear.

CHAPTER XI

PRESENT DAY PRACTICE

WHEN we come to consider work carried out during the past three decades it is evident that staircase building is as incoherent as is architecture in general at the present day. It is impossible to discern any particular style, or even any signs of a tendency towards the formation of a style, so largely and unmistakably are we influenced by the bolder characteristics of all ages and countries. Nevertheless there is this much to be recorded as clear gain : it is recognised that the staircase must be made comfortable, if possible picturesque, and, like the hall, should be so handled as to strike a note that will individualise the edifice, be it a public building or a modest dwelling.

In London we see the improvement that

has steadily grown since the eighties of last century by studying a group of buildings at South Kensington. First there is the Natural History Branch of the British Museum, with remarkably good staircases, both as regards planning and blending of materials. Then there is Mr Collcutt's "Free Classic" Imperial Institute, with its broad stepped, easy sloped stairway, passing under columned archways, linking up wide landings which broaden out into corridors right and left. And thirdly there is the even freer classic Victoria and Albert Museum of Sir Aston Webb, with its magnificent staircases of marble steps arranged in alternate flights round square marble-lined cages, leading to various landings, opening out into galleries or into arcaded and balustraded corridors.

At the Central Criminal Court, Old Bailey, City of London, designed by Mr E. W. Mountford, the grand staircase leading from the marble lined hall to the courts is adorned with alabaster, Verde Antico, and Hopton Wood marble. A flight of broad steps passes up between heavy balustrades through a square doorway to a half-way landing, and then right and left to the

upper hall, which is surmounted by a dome containing fine paintings and beautifully sculptured pendentives, The handrail is hipped wherever it approaches the massive corniced pillars, which take the place of newels.

In the New City Hall, Belfast, designed by Sir A. Brummel Thomas in the Palladian style, the grand staircase is approached under an arch, supported by two massive pillars, having in front quaint consoles. The first approach is by three semi-circular steps, the top one forming a landing, then plain steps without nosings, pass up between balustrades, with slender shaped pillar balusters, to a spacious landing, thence branching right and left to the first floor landing, where there is an open, balustraded circular gallery under the dome and looking down on the pillared staircase hall. Carrara, Pavonazzo and Brescia marbles are used, and there are seven three-light stained glass windows to illuminate its grandeur. Fine as it undoubtedly is both as regards design and material, one can but regret that the splendid variety of rich native marbles and granites, with their wide range of colouring, looking so well both rough

dressed and polished, were not chosen for a public building of this character.

In Glasgow there is the recently completed Mitchell Library, designed by Mr W. B. White, who has placed the principal staircase in a semi-circular turret in the middle of the main façade. It is of Blackpasture polished freestone, carried up in short flights, with ample half-way landings, provided with dwarf pillar balustrade having a heavy coping. It is adorned with massive columns, coupled on the half landings, has open main landing, passes under a coved ceiling, with projecting cornice supported on fluted Corinthian pilasters, and is lighted from the cupola.

Now, apart from their spaciousness, boldness of handling, perfect harmony with their surroundings, there is nothing, not even in the treatment of detail or ornamentation, to stamp any one of these as belonging to a particular age.

On the Continent, in France and Italy, the Renaissance as tamed by neo-classicism bears a more distinctive character than it does with us. The style is dignified, especially when applied to public buildings. For then we see a certain severity in dealing with broad surfaces, but relieved here



STAIRCASE, ST. BOTOLPH'S LANE, E.C. (SEVENTEENTH CENTURY).

and there by carved detail, chiefly carried towards the cornices and soffits, while there is a delightful use of sculpture, single figure and groups being more often treated as integral parts of the structure than as independent works of art placed in an appropriate setting. In Germany the classic style is rather more florid as to decorative detail, and, moreover, shows a curious Byzantine influence, both as regards general outline and ornamentation.

Partaking in a measure of the nature of public buildings, large blocks of flats afford the architect exceptional opportunities for displaying his skill in designing staircases. In England the rule to which C. J. Richardson called attention, that in public buildings the tread of each step should be 13 inches deep and the riser 6 inches, or preferably $5\frac{3}{4}$ inches, and for private houses the tread $12\frac{1}{2}$ inches and the riser 6 inches, is generally observed, even with a tendency towards greater ease, though the other demand that a landing 2 feet 6 inches deep should be placed between every 6 or 7 steps is rarely conceded. Owing to the costliness of sites in London and other big cities, the urgent necessity of making

the most of space often militates against good planning. While there is a general tendency to make the main entrance and staircase a central architectural feature, too often the well of the cage is occupied by a lift. Now, as Mr Frank J. Verity points out, "The passenger lift, which is mainly used to ascend to the upper floors, should not be placed in the well-hole of the staircase, for the regulations of the London County Council require lifts to be protected by an arrangement of ironwork which is unsightly and appears to diminish the size of the staircase."¹ Moreover, the practice is not without danger, because in the event of a really serious fire the lift-hole is apt to become a veritable furnace, thus placing the stairway out of service. A shiftless method occasionally adopted is to place both main staircase and service stairs in the same well or cage, merely separated by a partition. No doubt valuable space is thus saved, but again at the expense of safety. It is perhaps too much to expect an architect to carry out the central feature idea by placing the staircase in an exterior

¹ "Flats, Urban Houses and Country Cottage Homes," edited by W. Shaw Sparrow.

turret, as Mr White has done at the Mitchell Library. Charles Garnier said that one of the good points of 19th century architecture was the planning of staircases in large houses so that they should not convey cold air from outside all over the building, but rather, thanks to central heating, convey pleasing warmth to every apartment. The outside turret might be thought to nullify the victory gained over wind and fog, but the objection would be met half-way if the entrance was placed in an inside court. The feature praised by Garnier too frequently led to grievous sinning against hygiene, the staircase tightly packed in a massive block, was badly lighted and still worse ventilated. Mr Edwin T. Hall, in contrasting British and Continental methods of flat-building, says: "I could draw attention to the general feature abroad of staircases planned as semi-circles, ellipses or on other curved lines. The result is artistic and very pleasing, and it contrasts favourably with the straight flights of stairs in rectangular spaces so frequently seen."¹ He adds the

¹ "Flats, Urban Houses and Country Cottage Homes," edited by W. Shaw Sparrow.

warning note that "curved flights of stairs should not extend from floor to floor with intermediate landings." However, Richardson's landings for every seven steps are rarely forthcoming abroad, consequently some of these curved stairs not only look monotonous but are positively tiring, in spite of low risers. A good feature, specially noticeable in Paris, is that the staircases are now placed either against external walls, or overlooking inner courts.

A difficulty that frequently arises is the problem of lighting. When staircases reaching above the first floor are placed in the centre of large, tall houses, top lighting is almost always necessary. This is rarely satisfactory when mere cupola glazing is adopted. It is far better to have a coved ceiling, carrying the centre higher on pillars or pierced arches, admitting the light from the side, as is done so effectively at Ashburnham House. It often happens when a staircase is placed against external walls that for the sake of preserving the uniformity of the façade all the windows are identical in size and shape, with the result that the stairs sometimes cut across a window, producing a very bad effect.

It is far better to mark frankly the presence of the staircase by designing special windows. A very good instance of how to do this is to be seen in Professor Reginald Blomfield's three-light window on the staircase of the Oxford and Cambridge Club, Pall Mall. The tall middle window is arched, the shorter side windows have square tops and are flanked by columns. This looks well both from the interior and exterior. One way of circumventing the difficulty is to go back to the turret, round or square. As Mr T. Raffles Davison says in his "Modern Houses," the turret is also useful in simplifying planning. "It will be found," he says "that if the staircases were more often treated as an enclosed and separate apartment there would be a gain to the general comfort of the plan." This enclosure need not mean a turret, but that this is his ideal for country use he makes plain by stating his opinion that "if the staircase, bath and conveniences were all arranged together in a tower or gabled projection from the main building, comfort, economy and artistic effect would often result." For many reasons, however, we incline to think that this grouping is

unwise; it is certainly not a success as handled by Continental builders of flats.

Before we deal with country houses it will be well to consider a few typical or otherwise noteworthy examples of staircase building in town dwellings.

Possibly one of the most ambitious and at the same time interesting of recent undertakings in London is due to Mr Detmar Blow and Mr Fernand Billerey, who carried out the internal reconstruction of No. 10, Carlton House Terrace, a mansion built by Nash. It certainly shows considerable originality. On entering the large hall a broad sweep of marble steps is seen under a wide, rather low archway. It is placed laterally to the outer wall, the lower steps curving outwardly into an almost voluted form. This flight leads to a half-way landing, the back wall pierced by two oval openings. From this landing the stairs sweep upwards in a curve, then mounts at right angles to the first floor landing, where the stairhead is marked by coupled fluted Corinthian columns and side pilasters, whence spring vaultings. Facing these columns are a second pair over the half landing, as well as two



TRINITY HOUSE, TOWER HILL, LONDON.

pilasters, these carrying two arches. Through these arches is seen the secondary semi-elliptical staircase, designed for the more private quarters. The view of this inner stairway is decidedly effective, though perhaps somewhat marred by the balustraded gallery cutting right across the arches on the inner instead of the far side. Over the well of the main staircase is a circular balustraded gallery, through which a handsome electrolier depends from the cupola above. Then upon the right, tall windows pierced in the inner wall of the Salon have corbelled balconies jutting out over the stairs, the wall being adorned with pilasters between each pair. Everything harmonises well. Hall and staircases are lined with Caen and Painswick stone, the steps, 7ft. 6 ins. long, are single blocks of Irish black marble, the floors and landings are paved with Irish black and Pentelikon marbles, while the heavy balustrade starting from a massive pillar with upstanding pedestal crowned by a conically covered vase, is of wrought iron and bronze, supported on a strong, rounded kerb, a continuation of the string which hides the steps. Enriched stucco on the ceilings

and vaultings, the bronze balconies and bold mouldings, all combine to make up a remarkable composition.

Another instructive piece of remodelling was carried out by Mr E. F. C. Buckley at 67 Queen's Gate, S. W. Before alterations a narrow passage led direct from the entrance door to the foot of the stairs. On the left of this passage was a library, which practically formed an ante-chamber to the dining-room beyond. In the rearrangement the walls of the library were removed, and that room thus became part of the hall, but as the wall between the library and staircase carried the interior of the house, it was replaced by three free and two engaged columns, supporting arches. The staircase carried against the wall in long, easy sweeps, with spacious half landings, was placed behind the pillars the whole exterior side from string to floor, as well as the walls, being panelled, while the balustrade is of bronze in a light trellis pattern. By this planning semi-privacy is gained, though the architectonic value of the staircase, showing up behind the columns in the shadow of the arches, is retained. The colour scheme is by no

means the least noteworthy feature. The walls are painted in ivory-white, the columns of dark green Vert des Alpes marble with bronze square flat abacus and plinth, and the electric and the electric and other metal fittings of unlacquered bronze.

The use of the arch in giving this semi-privacy with the added charm of half-concealed vistas, is well demonstrated at Escourt House, Kensington Palace Gardens, where we find three arches dividing the panelled black and white marble paved hall. The middle and one of the outer arches are filled with square transomed doors, with traceried fanlights over them, while the other outer archway accommodates the stairs. These are of wood, the three lower steps coming through the arch well into the hall and protected on the outside by two carved newels with pointed terminals. These stairs are carried up between panelled walls to a half-way landing, whence there is a return flight to the first floor landing, which forms a square lobby with centre open circular gallery overlooking the hall, the balusters having thin plain shafts, with top and bottom rings and square abacus and plinth.

In Mr Horace Field's entrance hall and main staircase at the offices of the North Eastern Railway Company, Westminster, we have a barrel vault ceiling, with strong mouldings, the walls being panelled to the springing of the vault. At the end of the hall is the staircase of wood, the panelling carried up on a level with the balustrade, which has hipped handrail, and three spiral shafted balusters to each step. Another example of the archway and stairs beyond is to be seen in the Earl of Plymouth's house, Mount Street, designed by Mr Fairfax B. Wade.

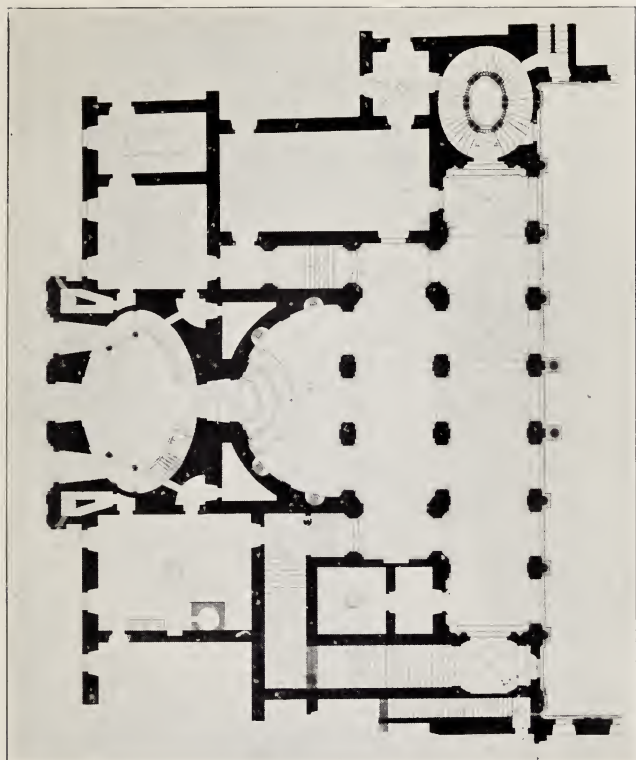
At Averley, Glasgow, Mr William Leiper has a wide entrance hall panelled in oak, a barrel vault enriched with a trellis-work of floral garlands in plaster, springing from the projecting carved cornice. The staircase lobby is seen through an arch, the soffit in carved oak, supported by two Ionic pillars standing on square panelled bases connected with the wall panelling. Three arches supported on two slender pillars are seen in the distance, the stairs skirting the wall, the sides being panelled to the ground. Above the string are panels with mouldings supporting short turned balusters

and a handrail. The lower part of a large window over the second flight is seen through the middle arch.

Many examples might be cited of how an otherwise commonplace staircase has been made interesting by some added fittings. For instance, in a house in Upper Berkeley Street Mr Walter Cave had to deal with ordinary straight flight at the end of a narrow corridor. He placed across the bottom of the stairs two arches in carved wood, supported by a square pillar and two engaged pillars. The arch facing the doorway was filled at the base with a balustrade, the handrail rising into swans' necks at each end, the balusters having turned shafts and round caps and bases. Through the archway, at right angles to the hall, a platform step was placed, the stairs, with plain square newel carried above the handrail, leading up from this.

At the Marlborough Chambers, Jermyn Street, Mr Reginald Morphew has placed in a panelled hall and stair well a very quaint stair. The newels are square, quite plain, carried up nearly to the ceiling and provided with flat board capitals. A square handrail is supported by broad flat boards,

with heart-shaped piercing near the top, placed alternately with pairs of square rails. Somewhat akin to this is Mr E. Guy Dawber's staircase in a house in Hollycroft Avenue, Hampstead. Here the end of the straight flight is barred by a plain balustrade standing on a panelled base, the newel carried above the handrail is square with an anvil-shaped terminal. The stair entrance is turned at right angles to the flight, the second square newel is carried up to the ceiling. The string is a broad plank, with top and bottom raised moulding, carried well above the steps, while the balusters are broad, flat slats placed between pairs of square rods. A house on the Hampstead Garden Estate, designed by Mr Michael Bunney and Mr C. C. Makins has a balustrade composed of a handrail with rounded top and sides decorated with mouldings, fairly broad flat balusters and round topped intermediate newels, while on the open balustraded landing the newels, somewhat elaborately turned, are carried up to support a ceiling beam, decorated with small drop pendants and wall brackets. A landing designed by Mr C. F. X. Voysey at Chorley Wood is



GROUND FLOOR PLAN, PALAZZO BARBERINI, ROME

enclosed in a kind of cage formed by vertical slats.

Quite a useful and artistic handling of a screen is seen on the Mr Geoffrey Lucas's Jacobean staircase at Padwell Lodge, near Baldock, Herts. It is placed at the end of a small landing reached by three steps, and shuts off the stairs from the adjoining entrance door. It consists of a panel formed of a frame containing two rows of balusters, one on the top of the other, with a horizontal bar between.

At Batsford, designed by Mr Ernest George, the long, easy flights of the staircase and galleried landings, are seen through the arcaded walls of the hall. Describing Mr E. L. Lutyen's work at Little Thakeham, Mr Davison says: "The stairs are so arranged that they give on to a landing looking down and across the hall, and from the landing the main upstairs corridor is revealed. The corridor is crossed with stone arches at intervals, and a door opening from it gives access to a balcony overlooking the hall fireplace, so that one may come out and look down on the hall from above." It is a very picturesque and favourite device,

well suited to a country house, and seen in endless variations. At Redisham Hall, Eccles, Suffolk, Mr H. M. Fletcher provided an arcaded gallery above the hall, reached by a flight of stairs partly in the hall and partly under the arcaded landing. At Kilbowie, Maidenhead, Berkshire, Mr W. Dunn and Mr R. Watson designed a hall, out of which the main staircase leads, two storeys high, with corbelled balustrade gallery down one side, giving access to the bedrooms.

Quite a different arrangement of galleried landing was adapted by Mr Horace Field for his staircase at Hookerel, Woking, Surrey. There is a quite short flight, with plain balustrade, passing through an archway to an arched landing. A second arch is fitted with a corbelled balustraded balcony, placed over another arched entrance.

Even more thorough in treatment is Mr Sydney D. Kitson's two-storeyed hall at the Red House, Chapel Allerton, Leeds. The staircase is entered through an archway, a straight flight leading to a half-way landing, then branching right and left to the open, cantilevered gallery, the stair-head being adorned with two columns and two

pilasters supporting the heavy decorated cornice which runs round the gallery and separates it from the soffit of the staircase well. Arched doorways open on to corridors serving the upper storey. Twelve square dwarf pillars are used to strengthen the balustrade, composed of turned balusters and a handrail, hipped on each side of the pillars.

Of modern work in the classic style a rather fine specimen is to be seen at Heathcote, Ilkley, designed by Mr Edwin L. Lutyens. The staircase vestibule is divided from the large main hall by tall fluted Corinthian columns of green Siberian marble. White and *fleur de pêche* marbles are used for the paving, the walls are of cream coloured Ancaster stone and the steps of black marble, while the balustrade is of wrought iron, slightly foliated scrolls alternating with straight bars ornamented with rings. The handrail is rather curiously hipped and decorated with awkward, ineffective covered vases. Three fluted columns are placed at the open first floor landing, and the walls of the staircase well bear fluted pilasters, above which is a heavy cornice, then a flat frieze with the ceiling cornice above.

While a modified form of the Georgian has found favour of late, it is evident that the Jacobean makes special appeal to the builders of country houses. Some examples may be given. At Ewelme Down, Wallingford, Berkshire, a roomy hall has a low ceiling of white plaster, crossed by numerous oak beams, forming panels of different sizes. The walls are also panelled in oak. In a lobby adjoining this hall the stairs are carried up in long, easy flights. In place of a starting newel there is a large square fluted column reaching to the ceiling. Four broad steps forming the commencement of the stairs are carried across the end of the hall, the top one forming a platform to a kind of alcove. That part of the lobby which is not stepped is cut off from the hall by a balustrade. At Huntercombe Place, Oxon, Mr O. P. Milne makes liberal use of large square newels, with curiously carved finials, carried high above the hand-rail. From the end of an arched hall at East Weald, Hampstead, Mr H. V. Ashley and Mr Winton Newman, carry a broad flight to a midway landing, and then with right and left flights to the upper landing. The interesting feature here is that the

three lower steps are free, with rounded ends. Then the balustrade starts with square newels, having faceted ball finials. There are two clusters of three newels to the turning on the half landing, decorated towards the top with lozenges in sunken panels; the balusters are turned, the shafts having a series of rings.

While woodwork is sometimes enamelled in colour or varnished, it is more often left plain or with a simple polish. In the same way we find the use of stucco, but in many houses plain bricks are left bare, even used in combination with dressed stone and fine woods. Mr A. Winter Rose's early Georgian houses, Marrowells, Oatlands Chase, Walton-on-Thames, affords an instance of this latter treatment. A plain balustrading is used for the staircase, but is dignified by fine wooden columns, placed however, on plain brick piers. Our illustration shows the first floor landing. On the right is the curious open arched fireplace shown on the plate facing page 172 of "Chimneypieces and Ingle-nooks," the preceding volume of this series. At Redlands, Wimbledon, designed by William and Edward Hunt, free use is made of hand-made bricks,

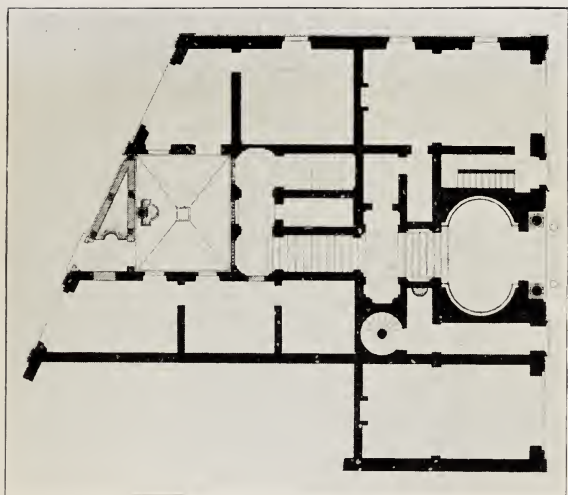
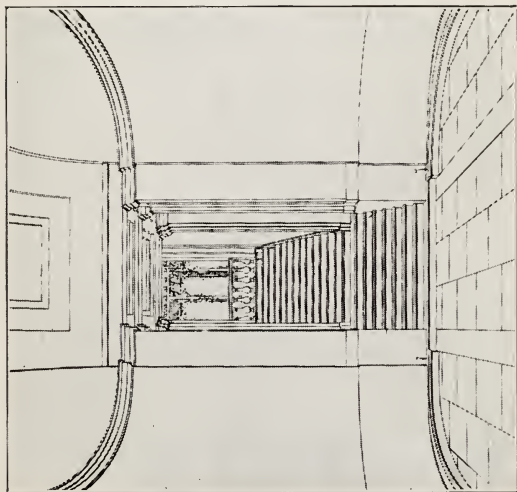
distempered plaster and Suffolk oak, wax polished. The staircase, leading out of a hall with cross-beamed ceiling, low arched fireplace of brick, is not panelled, but has an open Jacobean balustrade, with tall newels, placed on either side against the walls. It is entered under an archway. The arch, formed of four stepped courses in wedge-shaped strips, alternately of plain plaster and red bricks, springs from two piers of plastered brickwork, with brick capitals. A still freer use of brick is seen in a staircase by Mr Lutyens at Barton St Mary, East Grinstead, Sussex. Here the stairs are carried up without balustrade between plastered walls. The steps are of plain brick, placed flat for the treads, and on end for the risers. There are no nosings to the steps, and the ceiling is a brick vaulting.

This treatment of brick in combination with more costly materials is not without precedent. At the 16th century Château de St Germain-en-Laye, France, built by Androuet du Cerceau and restored by E. Millet, the stone stepped stairs are carried up between walls, under a barrel vaulted soffit of brickwork, strengthened at intervals

by broad hoops of stone. There are brick pilasters between the tall windows and also on the inner wall. A Dutch 16th century staircase, in the chancellery at Leeuwarden, is treated much in the same way, the stairs being under a brick barrel vault, but ornamented with tracery and pendants, while corbel brackets support the vaulting.

In staircases of American public buildings the influence of the later Italian Renaissance and of Palladio is apparent, with perhaps too assertive a use of the stepped parapet. In domestic "Colonial" architecture, the staircases, generally of wood, are well planned, with broad and easy steps with good, fairly plain balustrades. Very effective use is often made of the dextral and sinistral spirals for alternate balusters, with frequent variations in the gauge of the thread. Screens for stair ends and landings are also largely resorted to. There is, of course, a considerable amount of imitative work. "Colonial" is Georgian, but at its best, modified both as regards design and the employment of local materials, such as cedar and cypress woods, and excellent combinations of stones and tiles. Then we have such eccentricities as

an adaptation of Japanese bamboo joinery for a spacious staircase at Falls River, Massachusetts. But there is also much original planning. Take as an example a house designed by Mr Frank Lloyd Wright, overlooking the lake at Racine, Wisconsin. In a description of this by Mr C. E. Percival we are told that on the street side it is a two-storey and basement house, but on the lake side it becomes a full three-storey house. "From the entrance hall, whose floor is on the level of the side walk, the visitor ascends a short flight of steps, on either side of the chimneypiece, into the living room, the heart and centre of the house, two storeys high, and measuring 18 ft. by 20 feet. Here he is confronted by a broad expanse of tall windows, giving a comprehensive view of the ever-changing lake. Facing them is the big fireplace (in red brick), on either side of which are the stairs that lead up from the hall, and the stairs that lead on to the second storey, where the landing expands into a balcony over the fireplace." This is altogether a delightful treatment, where we find novelty, picturesqueness and compactness all combined.



HALL AND STAIRCASES, EIGHTEENTH CENTURY, PALACE, ROME. ELEVATION AND PLAN.

A development that has taken place of late years, practically in all parts of the world, is the enlisting of reinforced concrete for staircase building. The flexibility of the system, the rigidity of the completed structure, its lightness, its fire-resisting qualities, and the economy of space and material have secured for it wide recognition in this direction. Evidence of the rapidity with which construction can be accomplished is furnished by the two outside staircases built at the Crystal Palace for the Festival of Empire in 1911. They are both L shaped, placed some distance apart, and reversed. They lead from the main floor to the terrace, a height of 32 ft. 6 ins. The upper limbs are 75 ft. long by 24 ft. wide over the balustrading, and the lower limbs 83 ft. long by 21 ft. 4 ins. wide. The whole is of reinforced concrete, except the balustrading, which is of moulded concrete. The steps, without nosing, and with very low risers, are 14 ins. deep. The flights are carried on arches supported by piers of varying dimensions. A notable point is that these structures were begun on February 16th, the concreting was completed by April 13th, and the stairs open

to the public on May 12th. Staircases in reinforced concrete of considerable importance have been built at the new General Post Office, London; at Evans', Oxford Street, where Mr J. Murray built a straight flight of broad steps, the lower ones with rounded ends, leading to a half-way landing, and then taking a circular sweep right and left to the main landing. It is wonderfully light and elegant. There appears to be every prospect of this type of building coming into more general use for stair building. From the artistic point of view it should be remembered that concrete itself is capable of a measure of decorative treatment, and, moreover, such structures can be encased in any description of material.

CHAPTER XII

GARDEN STEPS

Two things are requisite in gardens : they must furnish an appropriate framing, designed to accentuate such characteristic features as a house may possess, and also agreeable surroundings amidst which hosts and friends may take their ease. Now, the nature of such frame should depend upon the style of the house ; the more formal the architecture, the greater the need for an approximating formality of setting. On the other hand, in order to secure the fullest measure of enjoyment from a garden there must be diversity ; a predominant privacy, cosy nooks suggestive of out-of-door apartments, of course, but added to this some vantage ground whence prospects of the outer world may be obtained.

Clearly, therefore, whatever the nature

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of the immediate setting, whatever system be adopted in planning the pleasure, a judicious use of steps will always add charm, whether these be required to link up different sections on varying levels, or, equally important, serving to provide those contrasts of high and low planes so necessary for the satisfaction of eye and imagination.

Italy is, beyond dispute, the land of garden steps; for its civilization has for ages been associated with hilly country. Probably nowhere else has the architectonic value of approach steps been better appreciated or more splendidly developed. Consider with what unerring art the palazzi and casini crowned hills of Rome, of Florence, and a hundred and one classic spots have been scaled, now by attacking the declivity boldly with a straight flight, like Jacob's ladder; now sweeping to right and left, perhaps meeting on a terrace and thence curving outwards again; making the ascent sideways, or negotiating steps in a series of zigzags. How often their clever designing, their monumental proportions form a fitting introduction to the glories of the marble dwelling and their rich treasures

of sculpture and painting. Out of the great number of these delightful combinations we may instance the Villas Colonna and Corsini at Rome, those of Aldobrandini and Torlornia at Frascati, the Palmieri at Florence, and quaint Caprarola near Viterbo.

At the Villa Palmieri the garden approach to the terrace is by means of fine flights of long semi-circular steps, flanked by a heavy balustrade, its broad, flat handrail sweeping gracefully over vase-shaped balusters, formed into bays by massive vase-capped pillars.

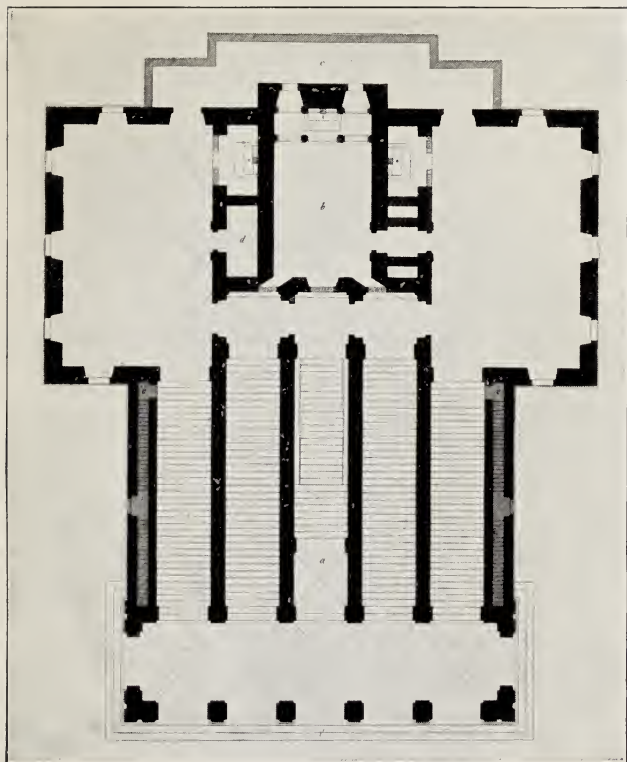
As for fantastic Caprarola, whose pentagonal lines were laid down by Antonio da San-Gallo, but whose fine achievement is due to Vignola, it is reached by a double stairway, the long course of which is divided by a stepped water ladder, ornamental fountains being placed at the head and foot.

Italian garden-makers, like those of the East, displayed great skill in utilising water so as to appeal both to the eye and ear. Sometimes we have placid canals as at the Palazzo d'Este, wide expanses of pond, though more often babbling waterfalls, or the musically splashing jets dispersed by sculptured groups and single figures into the basins below. Others send up their

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filmy water, beautifully iridescent with tender hues in the sunlight, then dissolving into pearly mists. At Caprarola the sun-bathed guest slowly wending his way up the side stairs, is refreshed by water as it tumbles, softly murmuring the while on its broken course to the great stone cup at the foot. Another justly celebrated combination is at the Villa Aldobrandini, where the stairs and central broad-stepped cascade comes steeply down the hill between avenues of trees, the last vista effectively closed by its notable architectural feature. Hard by, at the Villa Torlonia, the fountain at the stairway foot is served by a semi-circular stepped cascade. Equally good is the arrangement at the Villa Corsini, with its parapeted stairway, stepped stream of bubbling water and fountains.

At Isola Bella, where there is a pretty little *al fresco* theatre in the woods, having a semi-circular alcoved curtain wall, with a statue of Hercules, and three broad steps leading up to the stage, there are sets of steps with side water channels, this being a reversal of the usual arrangement. Another set of steps at Isola Bella, joining the upper and lower parterres, is typical of a certain



SCALA SANTA, ST. JOHN LATERAN, ROME.

trick of contrast. The upper three steps are long with oblique short-sections at each end. These steps merge into the slope and lead to an oval platform, thence are two outward steps with square returns.

When Salomon de Caus laid out the gardens at Heidelberg for Frederick V., the Elector Palatine, he contrived to build many flights of steps, some of them very curious. Among these we find plans of one set formed of two halves of an ellipse nearly cut asunder by the retaining walls. Here the upper steps are cut with an inward curve, producing a concave appearance, the lower with an outward reversing curve, the two sections being joined together by an elliptical platform. To add to the complexity, the inspringing portions of the retaining walls are stepped on a giant scale. Bordering the stairs are stepped dwarf parapet walls, each step being hollowed out into a basin, and the outer face pierced with a round hole. Down these inward and outward curving walls a stream of water danced from basin to basin. It must be confessed that this Gallic conceit lacked the natural elegance

of the Italian examples, giving indeed the impression of ill-spent ingenuity.

The Palazzo Barberini which stands at the base of a hill in the heart of Rome, close to the Vatican, is approached by an inclined plane leading to a broad terrace. On the garden front, just outside the columned portico, is a square perron, from which there are right and left ascending steps, carried the whole width of the palace to corner platforms, whence other flights at right angles ascend to a series of parterres, bounded by retaining walls, with a fountain facing the perron. Above this fountain a terrace runs, and from this are two long flights of about seventy steps one on each side of a sunk garden, the gradually rising walls of which are adorned with niches and grottoes. On the exterior of these stairs are zigzag inclined planes. Above these is a terrace, and then a smaller sunk garden flanked by steps leading up to a broad terrace, with another sunk garden, square at its base and semi-circular on its upper end, surrounded by two straight and then two semi-circular flights of stairs leading up to a large amphitheatre with ornamental screen wall.

On the garden front of the Villa Albani, just outside the Salaro Gate, Rome, there is a magnificent terrace, with two flights running towards each other, adorned with a fine balustrade and its walls with niches and grottoes. Facing this, at the other end of the long formal garden, is a pavilion with semi-circular portico, and from its terraces are stairways to the lower gardens. At the back of this pavilion is a very lengthy stepped cascade, flanked by stairways.

At the Villa Santi, Bagnaia, beyond the formal parterres are two delightful pavilions, right and left, with flights of stairs bordering their walls leading to a broad terrace, which has a circular fountain, partly on its upper level and partly on a lower terrace, reached by two stone stairways. At the further end of the terrace is another large semi-circular ornamented fountain, fed and stepped canal, which passes between gravelled paths, with an elaborate arrangement of landings and stairs at the farther end. Beyond this is a sunk garden surrounded by a low balustrade and closing the vista up the hill another fountain with cascade, seen between two small pavilions and two ranges of steps.

Other equally elaborate arrangements are adopted at the Villa d'Este, Tivoli, and the Villa Negroni, on the Esquiline Hill, Rome.

While monumental stairways, adorned with balustrades, balconied landings, vases, statuary and fountains were reserved for the approaches, grand terraces and for the purpose of linking up and embellishing the formal parts of gardens, rustic steps in many styles were reserved for the outer, more wooded sections. It was in these wilder parts of the domains that sundry variations of the *scala cordonata* appeared. The commonest form is that of a baulk of timber, a board, or more or less roughly dressed stones sunk in the ground like a retaining wall, the ground above being sloped gently to the next corded course. Sometimes these long, deep sloping steps were turfed, at others gravelled, and occasionally even paved. When the path is very steep, the corded course instead of running at right angles across is carried obliquely, from right to left and then left to right, thus forming a zigzag. In its turfed form this was a favourite kind of stepped path with the old French gardeners.

Le Blond and Le Nôtre were fond of placing them on either side of a cascaded canal.

Memories of how well such simple "corded ways" may be varied to surmount difficulties, and at the same time add the charms of the unexpected, cluster round that wonderful rock garden of Dr. Bennet, just on the Italian side of the deep gorge that marks the eastern extremity of Mentone. It was patiently built up on the steep face of a rugged grey rock, scarred by pockets of red clay. Winding from pocket to pocket, from terrace to terrace were stairs cut in the solid mountain side, serpentine paths and corded ways with steps in endless form leading on to patches aglow with semi-tropical cacti, creepers and palms, almost mingling with Alpine treasures hiding in cavernous shades, while precious water (brought in an aqueduct from high up the valley), trickled in a circuitous stream, now and again widening out into lily-covered maidenhair-bordered ponds.

It is in this spirit that the old-time builders of Italy used steps in their gardens, introducing modifications in accordance with local conditions so that in one small domain you pass from the highest efforts of art,

the majestic flights, to the most primitive of ladder paths with the feeling of fitness.

In France greater formality prevailed. We do not find anything quite to equal those splendours of the Renaissance builders in the Peninsula, but a very effective use of terraces with fine stair approaches. Perrons, those spacious terrace landings with flanking grand external stairways, were early made special features of Renaissance châteaux throughout the provinces, and the fashion has remained down to our own time. Apart from these terraces, from the 16th century to the 18th century, a good deal of rather pretentious garden step building was indulged in. We have already mentioned de Caus, and those better known masters, Le Blond and Le Nôtre, both of whose influence was felt far afield, in Germany, England, and even Russia.

Le Nôtre designed notable garden steps for many of the Royal Palaces. He was fond of making them monumental, forming great bastioned platforms in connection with the retaining walls, massing together blocks of rusticated masonry, bowed terrace landings, sloping parapets, or pillared balustrades, and on occasion introducing

sculpture and statuary. One of his stairs in the Tuileries Gardens had five steps up to a platform, then two flights to right and left of six steps each to lower landings with return flights of six steps to a second central platform, overlooked from the parapet of the first. From here six right angled steps, arranged in pyramidal form (the base of the set being greater in all directions than the apex, or top step), led to the lower garden. This plan of diminishing angled steps was constantly adopted by him. There was yet another example in the Tuileries, where he placed his steps in a bastioned portion of the wall. There right and left flights protected on the outside by wing parapets led to a platform, the back wall being handsomely panelled. The oblong platform was reached from below by eight angled diminishing steps. Now, if Italian garden architects had gone to the trouble of building such fine sets of steps they would not have failed to place equally imposing fountains either recessed in alcoves contrived in the walls at the back of the platform, or projecting therefrom. In this particular our ancestors frequently imitated them quite successfully.

Alexandre, Le Blond like Le Nôtre was addicted to grandiose designs, but he condescended to introduce delightful little oddities, such as steps placed at angles of terraces. One of these plans of his comprised two flights of eight steps at right angles descending to an octangular landing, thence eight steps showing five sides of an octangle led down to the garden. In another instance he had a triangular pillar with rounded base on the terrace, on either side of which were straight flights to a square landing, placed diamondwise, with right angled steps to the lower garden. For central positions he adopted the more or less circular form, individualised by such quaint variations as the following. On an upper terrace he had four massive wedge shaped pillars, and between them three flights of curved steps on the convex plan, leading to a circular landing, and then four semi-circular steps to the garden. In another instance he had a screen wall on the upper terrace, right and left curved flights of steps enclosing a curiously shaped basin with a fountain against the wall. Le Blond was a great believer in water stairs, which he placed on declivities between



STAIRCASE LANDING, BY MR. A. WINTER ROSE.

regular flights of steps, or commonly between zigzag paths when the incline was moderate. He liked to have these latter stepped paths closely turfed, which produced a fine contrast with the parapet of the canal and foaming water. In one plan which he gives we find an effective combination, a zigzag path being placed on either side of a monumental fountain, leading to two series of ten flights of four steps each separated by broad landings, the water stairs running in the centre.

Many English gardens are noted for their fine terraces, steps, gateways and fountains, often grouped in splendid style.

At Bowood, Wiltshire, the extensive grounds are embellished with a great diversity of stairs, some passing down between plain dwarf parapets, in others the parapets themselves are stepped. Marking the termination of the wide central path on the terrace leading from the garden porch to the house is a double flight of curved steps, enclosing a mural fountain, high backed with sculptured group, and a screen of hedges and trees in the rear ; while from the high terrace at

the Garden House end is a side flight with a parapet wall, which looks very well.

Chatsworth presents much that is interesting. From the terrace in front of the house, and overlooking the lawns with their groups of statuary, elaborate flights of long steps are protected by handsome wrought iron balustrades. Then there are the two long, broad flights, with intermediate platforms, leading up between groups of statuary on pedestals to a Grecian temple closing the splendid avenue.

Wrought iron balustrades are not often used in connection with garden steps in England, even when these connect the house terrace with the lawns or formal parterres. The exceptions are usually found associated with outside stairs. Such is the very beautiful example at Drayton House, Thrapston, where the steps from the house to the garden have balustrades with square panels of slightly foliated strapwork. As a rule stone balustrades or parapet walls are preferred.

One of the most admirable groupings of screen walls, gates, terrace, steps and fountain is to be seen at Holland House, Kensington. It is due to the skill of

Nicholas Stone, working to the designs of Inigo Jones, and marks the division of the upper from the lower garden. Behind the terrace, with low parapet, is a pierced screen wall, formed of moulded octagons, so placed as to leave smaller octagon openings. A heavy cornice crowns it. At the entrance from the upper garden to the terrace are two pillars, adorned with arched alcoves between two slender columns supporting large pediments crowning the whole, decorated with prominent mouldings. Facing this gateway are right and left flights of steps, turning outwards and parallel to the retaining wall, protected by open-work balustrades, ending in large square rusticated dwarf pillars. Against the wall, between the two flights, is a wide arch with fountain and a basin jutting out. It is interesting to note that the rustication of the pillars is practically similar to that adopted for the wood balustrade of the grand staircase in the mansion which, by the way, had a wide balustraded terrace on the main front, approached by a flight of wide low steps. From this terrace a second flight led up to the entrance porch.

Other typical examples may be cited. At Tissington Hall, Derbyshire, the gardens are laid out in terraces, with masonry retaining walls. These terraces are connected by means of numerous sets of steps, some placed at the ends, others in the middle of the terraces. Some of these are parallel to the walls and without parapets or balustrades. Others are placed at right angles, between low parapets ending in pillars bearing vases. These are quite unassuming both as regards dimensions and design, but nevertheless have a distinct artistic as well as a utilitarian value. Derbyshire, by the way, provides many excellent examples of garden steps, some of these built in triangular pyramidal form in the angles of terraces. We have seen there a recent combination of two forms of semi-circular steps, those giving access to the terrace forming a crescent hollow, just above them reaching to the entrance porch the reverse is presented, the outward curving steps being of the retreating order.

At Ingestre Hall, Staffordshire, the long terrace, consists of sets of seven stone steps with low parapet walls, interspersed by long stretches of gravel path, passing between

grass plats, arches of yew bridging the avenue at frequent intervals.

Brick is in many surroundings to be preferred to stone for this branch of stair building, as may be realised on studying the semi-circular flights at Packwood, Warwickshire, with the pillar terminations crowned by vases.

In this, as in other matters, the great art is to adopt suitable materials and designs for the special surroundings.



GLOSSARY

ABACUS, the top part of a baluster.

BALANCED STEP, *see* Step.

BALUSTRADE, the vertical protection on flights, including the *handrail*, *balusters*, or rods, and *newels*, or starting and intermediate posts. A *framed* balustrade is filled in with panels in place of balusters.

BALUSTERS, the vertical rods or panels between the step and the handrail. *Bracket* balusters are those carried outside the steps, and fastened to the string by means of a projecting bracket.

BOX, or BOXED STAIRS, *see* Stairs.

BRACKETS, ornamental pieces resting on the string and supporting the steps.

BULNOSED, *see* Step.

CIRCULAR STAIRCASES, *see* Spirals.

CLOSED NEWEL STAIRS, *see* Stairs.

COCKLE STAIR, from the Latin *Cochlea*, a spiral staircase.

COLUMNATED WINDOW STAIRS, have steps set on columns, so as to permit light to come in from all sides.

COMMODE, *see* Step.

"CORDED" WAY OR STEPS, *see* Scala Cordonata.

CURTAIL STEP, *see* Step.

DANCING STEP, *see* Step.

DOG-LEGGED, *see* Stairs.

ESCALIER A JOUR. A French term applied to stairs placed in turrets with open galleries, or in open cages.

FLIGHT, a succession of steps, without interruption of landing. A flight may be *straight*, direct from one point to another; *square*, winding round a square newel or well; *triangular*, winding round a triangular newel or well.

FLIERS, *see* Step.

GEOMETRICAL STAIRS, *see* Stairs.

GREES (from the French *dégrés*, steps), a term applied to diminishing steps rising gradually, one above the other, the lower occupying on plan the greater area.

HALF-TURN STAIRS, *see* Stairs.

HANDRAIL, *see* Balustrade.

HANGING STEP, *see* Step.

HELICAL STAIRCASE, *see* Spiral Staircase.

HIPPING, curving the handrail to adjust differences of level. The same as *swan-neck*. *See* also Ramp.

INCLINED PLANES may be straight (when they are sometimes termed *ramps*, q.v.) or wind-

ing, and may be used inside or outside of buildings. Sometimes they are stepped, *see* Scala Cordonata. Many stairs are based on inclined planes, especially the spirals of the middle period.

LANDINGS are platforms connecting the stairs with each floor, and are known as 1st or 2nd floor landings, or where there is only one, as the head or starting landing. Half-way landings are placed midway in straight flights to ease the ascent, or at the turn of winding stairs to afford resting-places and to ease or avoid curves.

NEWEL, the starting post, or post placed between two flights. A *clustered* newel is formed of several *balusters* grouped into a circle, square, or other form. A *continued* or *continuous* newel is one which is carried up as a pillar to support the upper flights, landings, or soffits. The term *close* or *closed* newel is applied to a central shaft. A *hollow newel* is one of cylindrical formation. The term *open newel* is applied to a newel stair built round a well-hole.

NOSING, the edge of a *tread* projecting over the *riser*. *Return nosing*, the edge of the *tread* projecting over the *string*.

ONE TURN STAIRS, *see* Stairs.

OPEN NEWEL STAIRS, *see* Stairs.

PERRON (French). A balustraded landing to an outside staircase.

PITCH, the relation between the *riser* and the *tread*, which determines the steepness and ease of the stairs.

PLINTH, the base of a baluster or newel.

QUARTER TURN STAIRS, *see* Stairs.

RAMP (1) The handrail, from the French, but usually applied to an *easing* or *hipping*, where levels have to be adjusted. If this easing in place of having an upward trend has a downward dip, it is termed a *knee*. A *swan-neck* is a combination of the *ramp* and the *knee*.
(2) An inclined plane.

RISERS, *see* Step.

SCALA CORDONATA, or *a Cordini* (Italian). Inclined plane with very deep sloping steps, either paved or unpaved, marked by wood or stone *risers*.

SCREW STAIRS, *see* Stairs and Spiral Stairs.

SCROLL STEP, *see* Step.

SPANDREL FRAME, panels sometimes introduced between the string and the floor.

SPANDREL STEP, *see* Step.

SQUARE STEP, *see* Step.

SPIRAL STAIRCASES are those whose steps rise in screw form, either round the walls of a well and having an open centre, or round a central shaft. They may be *circular*, *elliptical*, *ovoid*, *triangular*, or *square*. They may have a *right* (*dextral*), or *left* (*sinistral*) turn.

STAIRCASE, that part of a building set apart for the stairs. Generally understood to comprise the *steps*, *balustrade*, and the *well*.

STAIRS, a combination of steps. *Straight* stairs are carried direct from point to point. *Turning* stairs change their direction in the course of ascent. They are divided into (1) *quarter turn*, (2) *half turn*, (3) *three-quarter turn*, (4) *one turn*, passing in the course from top to bottom respectively through one, two, three, and four right angles. *Newel stairs* have starting posts and intermediate posts at the commencement and turnings. A *closed newel* stair is one with newels one above the other, and no open space between the flights. An *open newel* stair is a well-hole stair with newels. *Geometrical* stairs have no newels, but continuous strings, joined at the curves by *wreaths*. *Box* stairs are those with two closed strings, enclosing the steps in a kind of box. *Dog-legged* stairs have no newels, but have a forward and return flight, whose outer strings and balustrades are immediately over each other. *Screw* stairs are in the circular form, with steps radiating from a central newel (see *Spiral*). *Columnated* stairs (see *Columnated Window Stairs*).

STAIRWAY, Stairs, or a set of steps not enclosed in a well or cage. Sometimes, with doubtful correctness, applied to internal stairs as a

separate portion of the entire combination or staircase.

STEP, comprises (1) the *tread*, horizontal or upper part, and (2) the *riser*, vertical, or upright portion. Steps may be *solid* (also known as *spandrel* or *square*), when the tread and the risers form a right angle ; or they may be provided with a *nosing*, when the tread projects beyond the riser. These projections may be rounded, chamfered, or moulded. Risers may be solid, or may be open ; in the later case they are in the form of frames, with the centre left open to allow of the passage of light, or, in the Middle Age stairs, to be used as *meutrieres*. *Fliers* are steps of uniform width ; *winders* are narrower at one end, such as those used in spirals, and for forming curves. *Balanced*, or *dancing* steps are winders placed between two risers which are not normal to the curve, in order to reduce the reduction of the width. *Bulnosed*, a step with one end, or both, projecting beyond the string in semicircular form. This is somewhat similar to the *curtail* or *scroll* step, whose end, or ends, terminate in a scroll or spiral, beyond the string, generally enclosing a newel. *Commode*, a combination of two or more steps at the end of a flight, projecting beyond the string and surrounding the newel, which it apparently supports. *Hanging* steps are stone steps with one end

built into the wall, the other end having no other support than that of the step below. A *weathered* step has the upper surface inclined from the plane.

STRING, or Stringer, the inclined pieces supporting the steps. Those outside are known as *face strings*, those against the wall as *rough strings*. An *open* or *cut* string has its upper edge notched to the shape of the step, and the *close*, *closed* or *kerb* string has the upper edge straight. A *bracket* string is an *open* one with bracket-shaped pieces seemingly supporting the step. In a *cut and mitred* string, the vertical ends of the notches mitre into the ends of the risers. *Housed strings* are carried above the steps.

SWAN-NECK, the "hipped" part of a handrail, adopted to adjust differences of level. Usually combines the *ramp* or concave, and the *knee* or convex bends. The same as *hipping*. See also Ramp.

THREE-QUARTER TURN STAIRS, *see* Stairs.

TREAD, *see* Step.

VYSE (from the French *vis*, a screw), a term applied to newel spiral staircases.

WEATHERED STEP, *see* Step.

WATER STAIRS. Artificial stepped cascades, which may be steep or of very easy gradient, rustic or monumental. In pisciculture a more elementary form is used, called *water ladder*. The term is also applied to stairways leading

to the level of a lake, river, or other water expanse.

WELL, or Well-Hole, is the clear space round which the stairs are carried.

WHEELING STAIRS, are Spirals (*q.v.*).

WINDERS, *see* Step.

WINDING STAIRS (sometimes called *winders*), are Spirals (*q.v.*).

WREATH, is the curved part of a string or hand-rail following a turn in a geometrical stairs, and is used to secure continuity.

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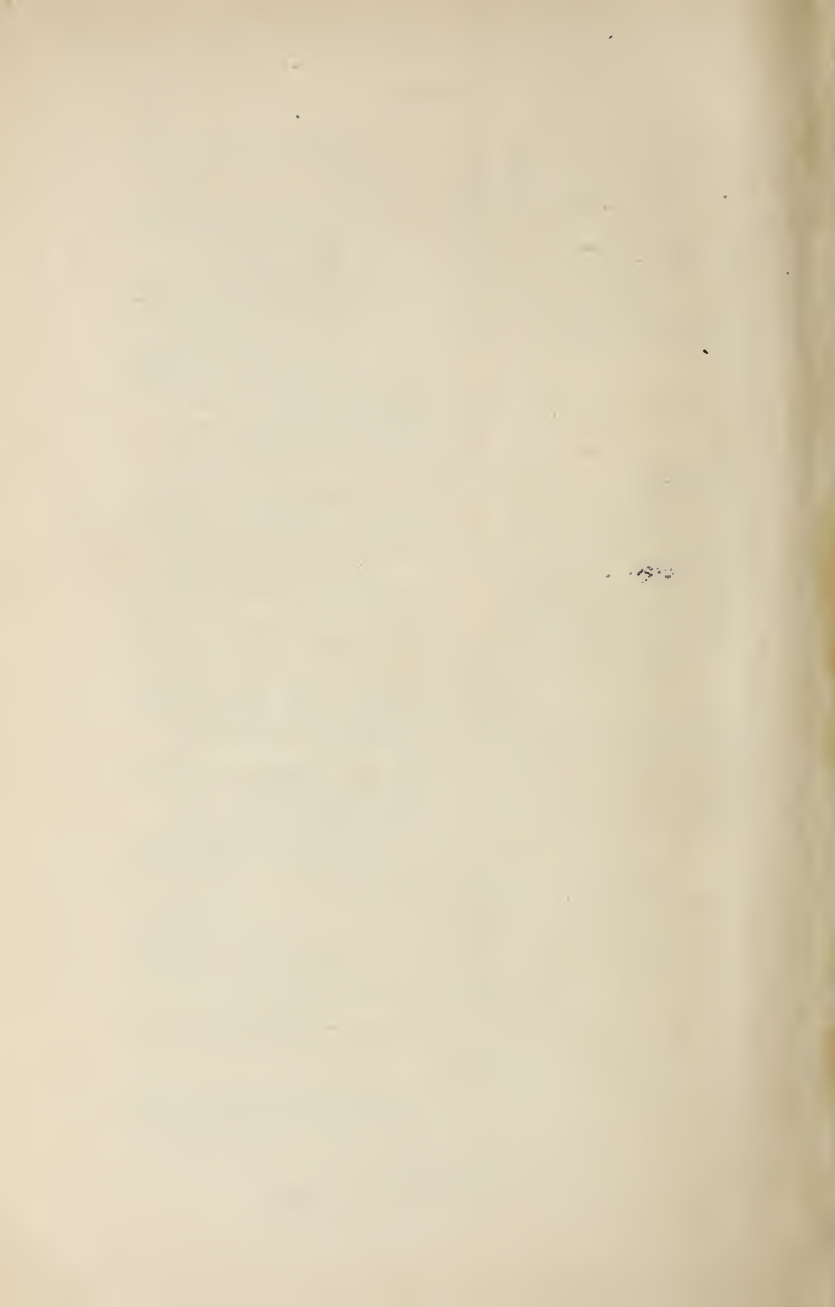
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